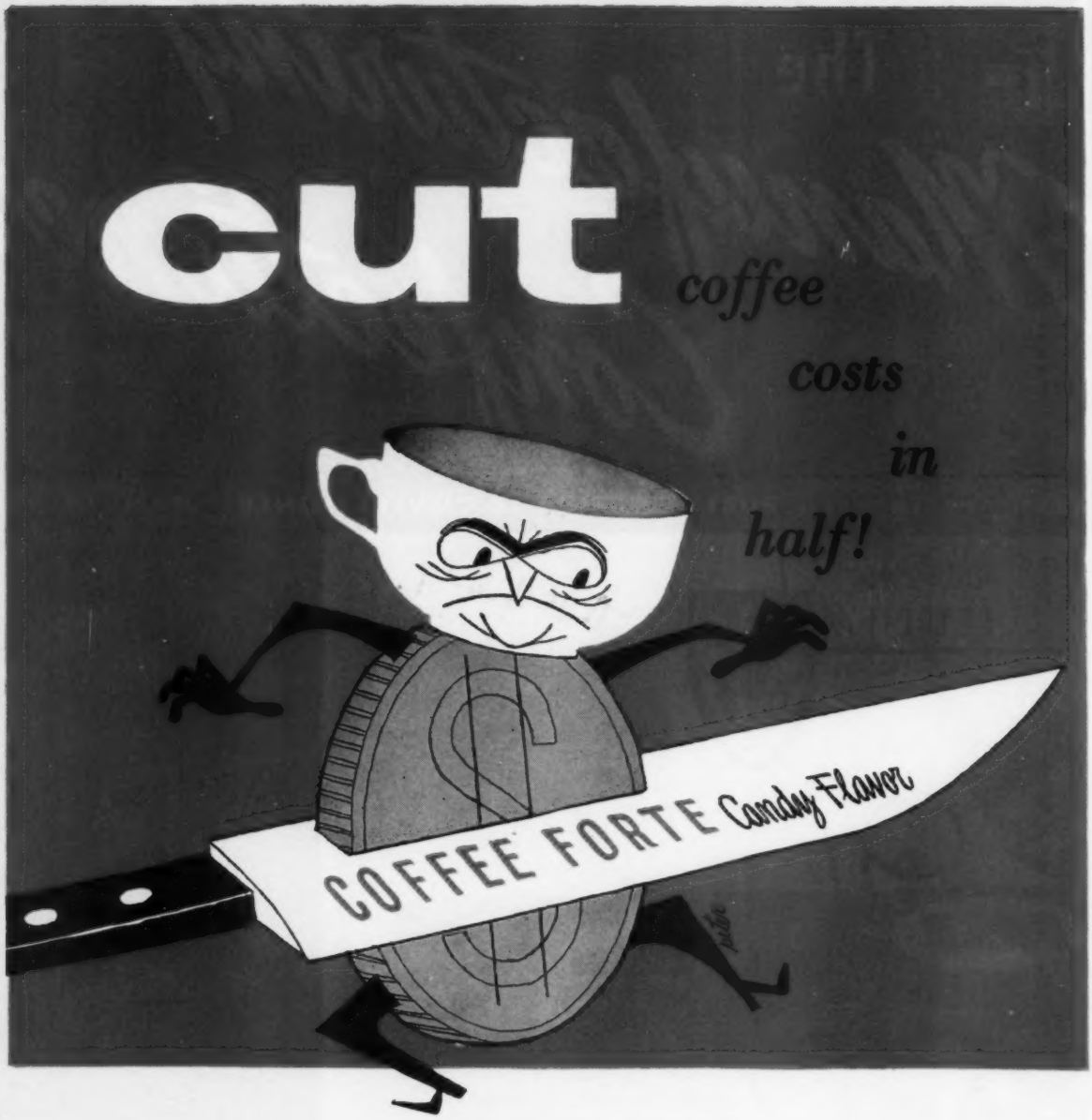
The Manufacturing Confectioner

PIONEER SPECIALIZED PUBLICATION FOR CONFECTIONERY MANUFACTURERS

AUG 19 1954
DETROIT

Soft-Grained Sugar for Making Chocolate

AUGUST 1954



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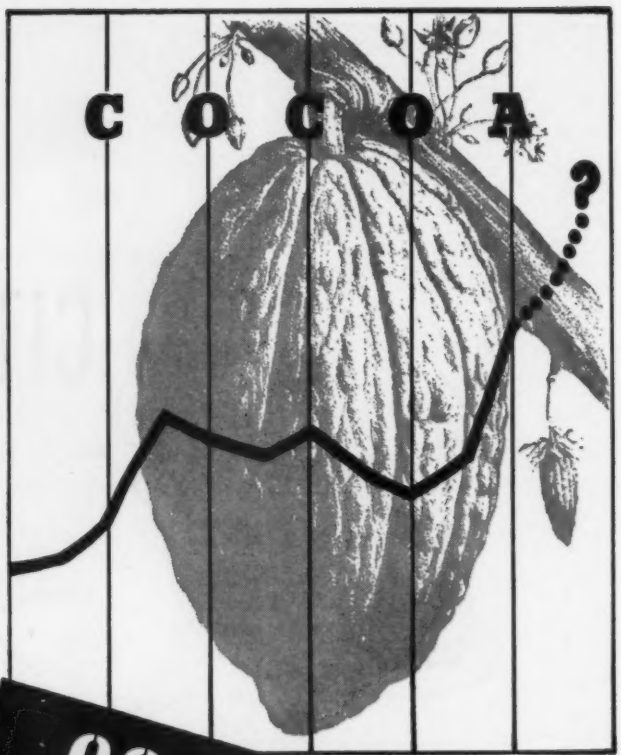

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The Manufacturing Confectioner

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August 1954

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COVER: Heidelberger Confectionery Company is packaging "Tricks or Treat" in colorful Halloween masks. Six each of the four different candy filled masks are packed on a counter display box. A window streamer is included.

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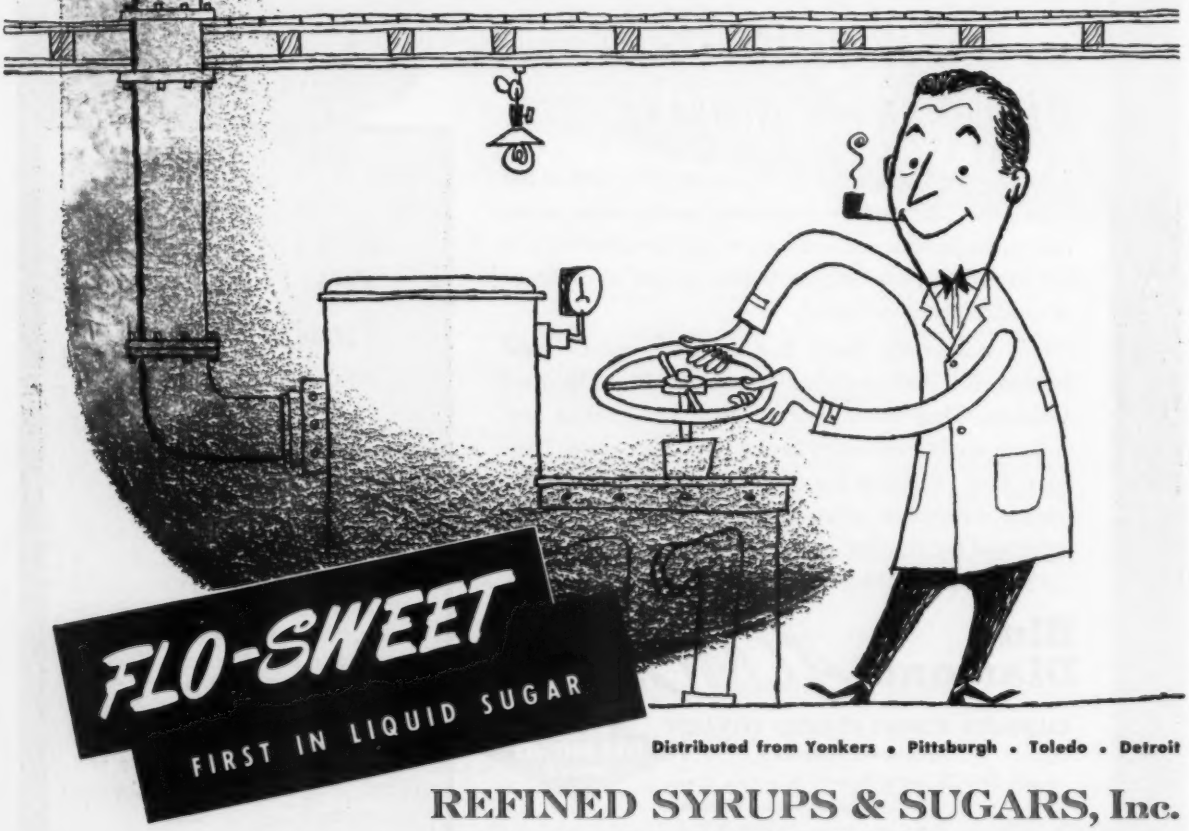

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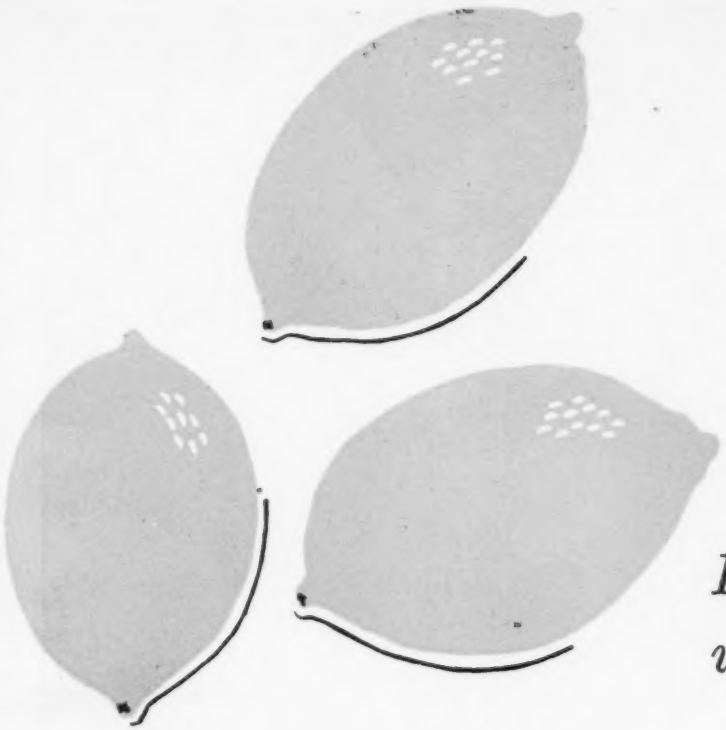

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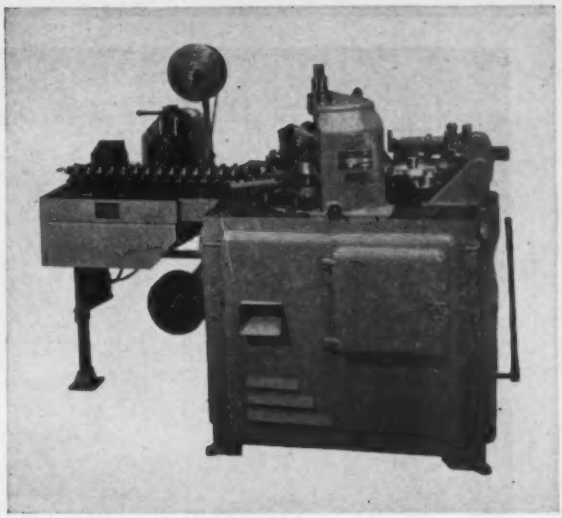

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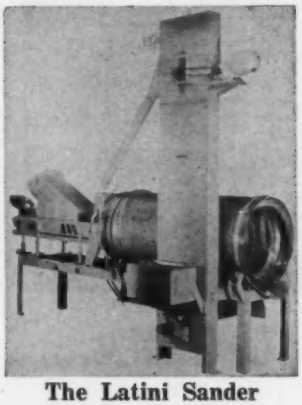

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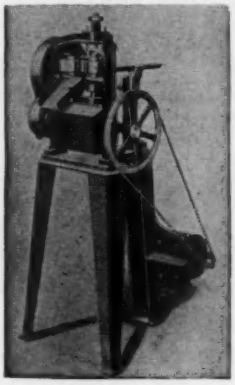

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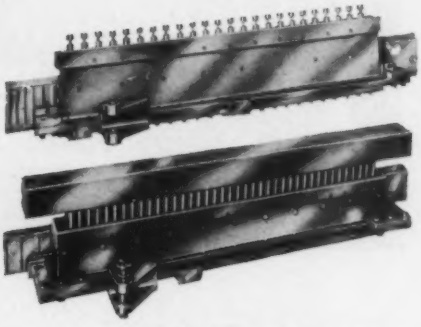

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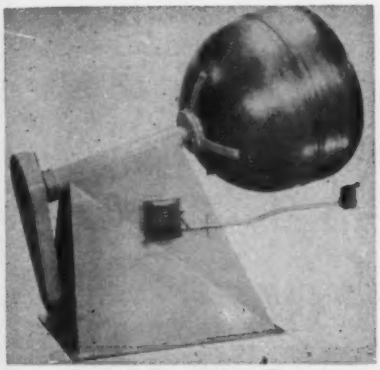

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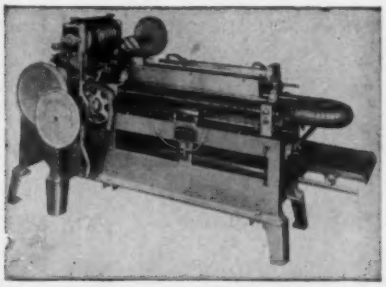

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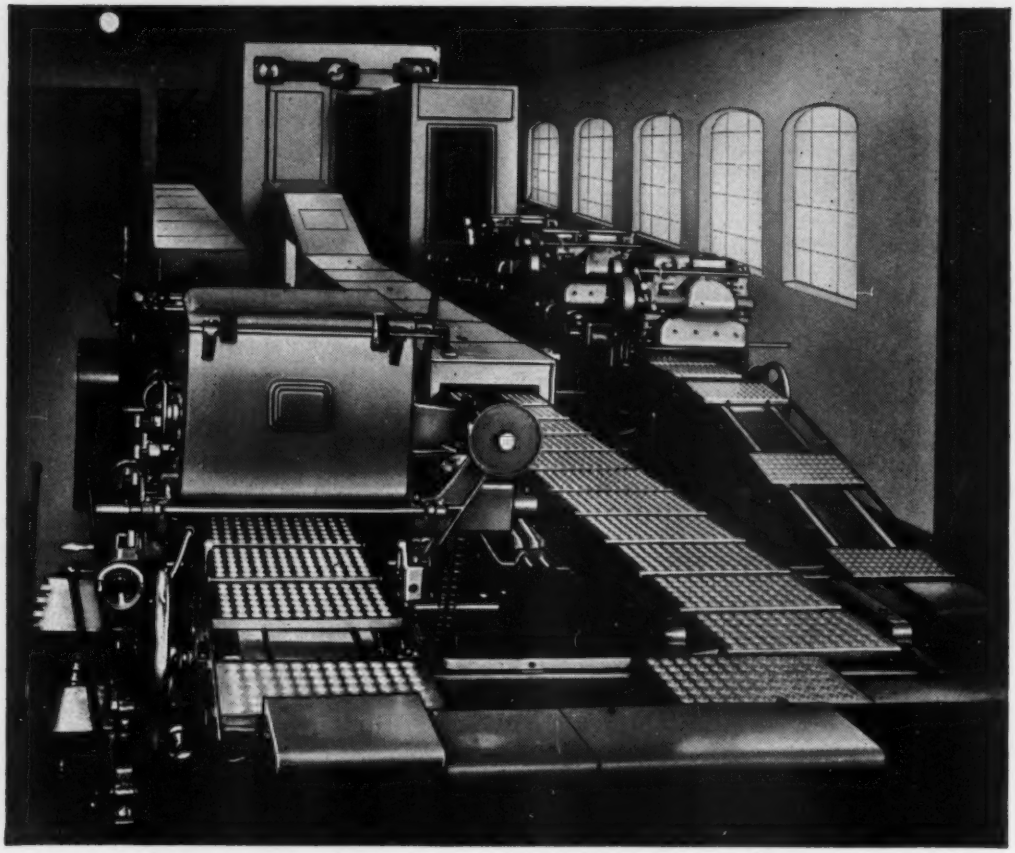

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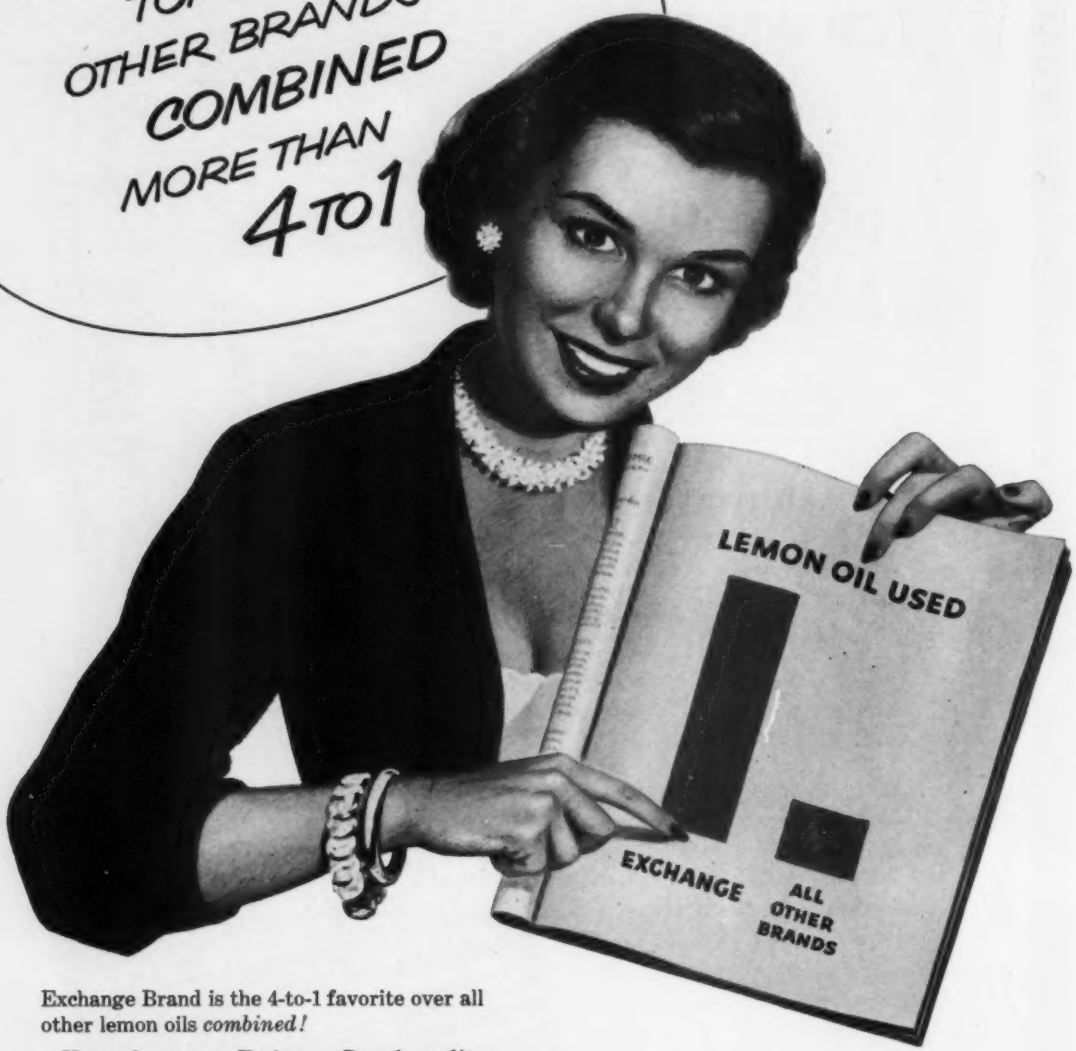

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Mr. Robert Whymper describes the possibilities of the use of soft-grained sugars in continuous chocolate manufacture. Our magazine has been privileged to publish many of Mr. Whymper's writings, including his book "Chocolate Fat Bloom." This article will be the first of several giving some of the experiences and thoughts of Mr. Whymper from his many years work in the fields of chocolate and sugar.

Soft-Grained Sugar for Making Chocolate.

Its Revelance to Potential Continuous Processes of Manufacture of Chocolate

by ROBERT WHYMPER

The article by Mr. J. Koch in the February issue of the 'M.C.' entitled "Why not use FONDANT SUGAR for chocolate manufacturing?" can be answered only after some important points, omitted by that author, have been first considered. And the answer then would be "There are several good reasons why such a Sugar *should* be used!" provided that we are all agreed upon the meaning of Mr. Koch's unfortunate selection of the words "FONDANT SUGAR" which are presumably intended to imply 'some sort of a physical state of Sucrose different from that of ordinary Granulated and Powdered Sugar, and prepared by some sort of manipulation not unlike the confectioner's method of making his commercial fondant'. The manufacture of such a Sugar has been ancient procedure in Portugal in preparing the native 'Areados' Sugars, in India in making most grades of 'Gur', and elsewhere in the world where a soft-grained, fine-grained, crumbly Sugar is needed for popular consumption, for certain household requirements, and for some manufacturing-purposes.

Mr. Koch clearly did *not* mean a dried and powder form of confectioner's fondant, such as the 'Drivert' put on the market by a Californian Sugar Refiner some years ago and that I investigated during the boom in dried 'ready-to-use' fudge mixes, since he admits that "invert sugar and corn syrups are not acceptable constituents of a normal eating chocolate . . .". But, further, Mr. Koch does not answer his own question except in the negative, so far as I can gather, on the grounds of undue cost in the case of his dry Sugar because of high overhead, and a rather vague implication that the flavor of a dark Chocolate made with his 'FONDANT SUGAR,' if formed in direct contact with Cacao Liquor would be of poor quality. Under the circumstances, I think that Mr. Koch would have been wiser to have approached his subject from the point-of-view of the consistency of the Sugar in a 'Broadway Loaf'*, for example, rather than from that of Sugar crystals obtained by evaporating to complete dryness Sugar solutions by means of applied heat throughout the operation. For the preparation of the 'Broadway Loaf' embodies the principles in making soft-grained Sugars of high-Sucrose purity of the type under consideration (which Mr. Koch's procedure need not), and the 'Loaf' is a 'candy' product known to every practical confectioner, if somewhat tricky in manufacturing at its best.

I may, perhaps, be allowed to give something of the story, as known personally to myself, of some different methods employed by Chocolate Manufacturers to use physical forms of Sucrose other than commercial Granulated Sugar (or its powdered crystals), or 'recrystallised' Sugar by simple evaporation from solutions—and specifically of 'Transformed' Sugars which, hitherto, have been little publicised in

* For the trick in making a "Broadway Loaf" I suggest consulting Mr. Peter Laureys of the Loft Candy Corp. whose knowledge on the subject is unique if, sometimes in the past, it was a headache for the Sugar Refiner whose Sugar he happened to be using. R. W.

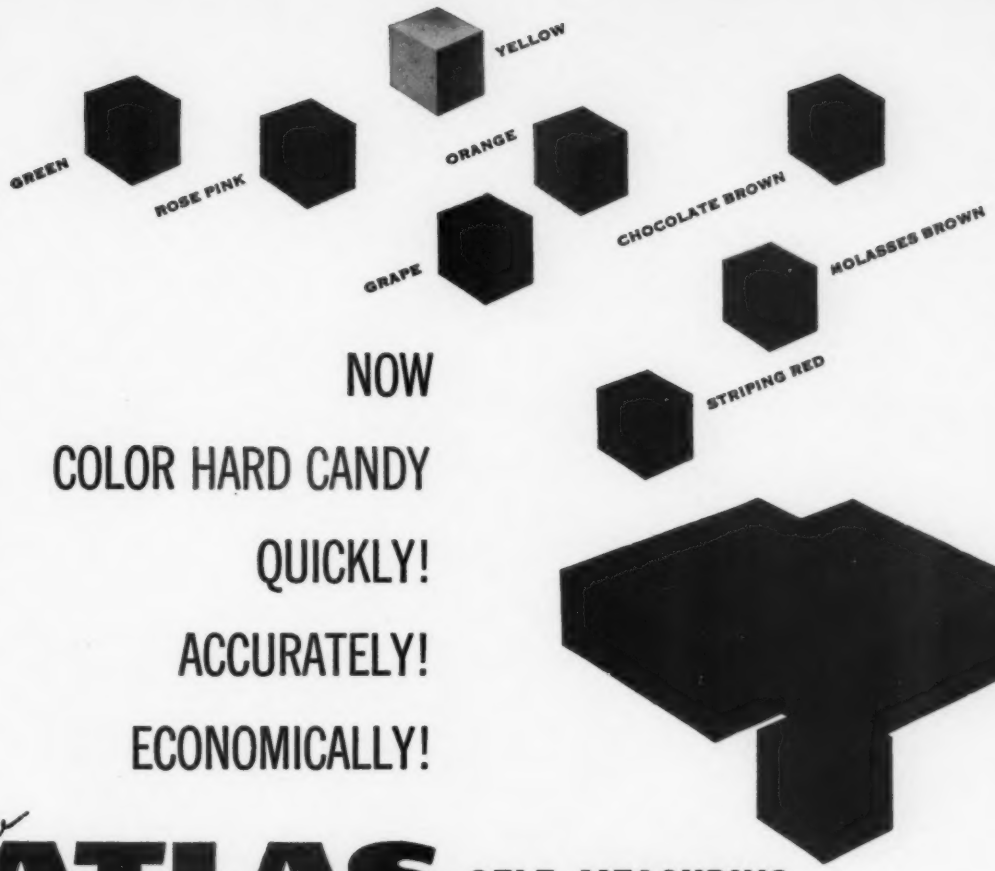
technical journals and, today, are unfortunately unavailable in the United States, a fact that does not, however, detract from their practical utility in the Chocolate Industry and elsewhere. The earliest processes for making soft-grained Sugars were in actual practice a long time before my generation, while more modern, more scientific methods have received considerable study by myself and others between 1912 and 1950 with more or less commercial success—the success being, I maintain, not to be assessed by conservative manufacturers of only cheap Chocolate-coatings, though the extensive and prolonged use of 'Transformed' Sugars, when available, by some of them even in the U. S. was fully demonstrated as an economic and otherwise satisfactory proposition.

The day will come when the quite obviously desirable manufacture of Chocolate by continuous process through, I believe, the major employment of hot, high-concentrations of Sugar solutions will be seriously and scientifically considered—the so-called "Liquid Sugars", so readily available today in bulk, probably pioneering the innovation. But, in such a case, the two aspects of the technical problem—(1) the employment of a pre-formed *dry*, soft-grained Sugar substituting for powdered Granulated Sugar, and (2) the addition of hot, quickly graining, high-concentrations of *Sugar solutions* to Cacao Liquor—will have to be combined. The utilisation of both these ideas in conjunction has already proved, even if experimentally at the rate of only 500 pounds per hour of Chocolate, to be entirely feasible. The reason why little further progress has been made in this development will be appreciated later, while it is, perhaps, not out of place at this early stage of our argument to state that, *as a purely economic proposition*, a Candy Factory making Hard Candies, Fondant, and other high-Sugar products (including Chocolate) would be fortunate in having its site directly adjoining a Sugar Refinery,—which, by the way, is not an original thought.

The three most important points omitted by Mr. Koch, the first of which could not have been guessed even from his charts, were:—1. In boiling down pure Sucrose solutions by themselves (and also Sucrose solutions containing some 5% of Invert Sugar), there is no need to continue *applied* heating until a state of dryness is reached, even if it is desired to obtain a dry Sugar only. At certain hot and high concentrations, Sugar solutions (according to their purity) will crystallise so rapidly when agitated on slight cooling (with or without seeding) that the 'Heat of Crystallisation' will jump up the temperature high enough to allow the remaining water to be driven off as steam, resulting in a dry, aërated Sugar mass, *without further applied heat*. Under properly controlled conditions, the production of Invert Sugar during this operation is extremely small and negligible for our purposes. This, in brief, is the principle involved and used in making all types of soft-grained, aërated Sugars known to me—from age-old Asiatic 'Gur' and centuries-old Portuguese 'Areados' Sugars down to the more modern preparations such as 'Transformed' Sugars and the candy-form 'Broadway Loaf'. Some of these Sugars have been successfully used in Chocolate-making certainly before my time but whose valuable characteristic of *'softness of grain'* started our more thorough investigations some forty years ago. The so-to-speak "gratuitous" supply of the extra 'Heat of Crystallisation', though ignored by Mr. Koch, is of both economic and practical importance in the production of all soft-grained Sugars, including Mr. Koch's 'FONDANT SUGAR', if I understand him correctly, but has not been taken into account, or, at least, mentioned by Mr. Koch in his B.T.U. calculations.

2. The dry Sugars formed from solutions in the manner roughly described, being aërated by the evolution of steam during their plastic or 'doughy' condition, are of a soft, friable nature, easily crumbled and sifted when cold. The very small, soft crystals resulting from this treatment adhere together in agglomerates of different sizes according to the conditions and methods of preparation—e.g. purity and pH of Sugar solution, temperature of Sugar solution when boiling is stopped, speed of agitation, temperature of Sugar solution when agitation is started, and amount of seeding, if any. The finer of these agglomerates in a Chocolate-mix are very easily crushed on a Chocolate 5-roll refiner and are reduced to the fineness of particle-size required for a 'fondant' eating-Chocolate or fine Coating in quite one-third the number of passages through the same refiner as are needed for the hard crystals of, say, 4X powdered Granulated Sugar. This fact is also of economic importance, while it should be noted that it is the *softness of the grain NOT its initial particle-size*, the latter particularly stressed by Mr. Koch for his Sugars, that is of prime consideration in the case of 'Transformed' Sugars, at any rate, when used in the manufacture of Chocolate.

3. The heated Sugar *syrup* may alternatively be added to Cacao Liquor, as Mr. Koch has mentioned, in a melangeur or other mixer (instead of adding the pre-formed *dry* Sugar), when the resulting Chocolate, *if* the operations have been properly carried out, will be of *superior* flavor, contrary to Mr. Koch's belief. But in such a case, *the Cacao Beans must have been merely dried or lightly roasted (according to circumstances), and the nibs therefrom (or the Cacao Liquor, when possible) allowed to develop their full flavor in the hot crystallising Sugar solution.* The 'Heat of Crystallisation' is apt to be retarded under these conditions, and, eventually of course, any residual water must be driven off by *applied heat* before the Chocolate can be said to be "finished". In this connection, it should be noted that the finest flavored almond and hazel-nut 'pralines' result from the roasting of the nuts in molten Sugar, and that, while a *minimum of water present is desirable at all times in the case of Chocolate*, the higher concentrations of hot Sugar solutions in the process of rapid crystallising, when added to Cacao Liquor in brisk agitation, are in no way harmful to flavor after complete elimination of any surplus water has been accomplished, if necessary, in the manner suggested by Mr. Koch. There are, to be sure, many patents in existence of ancient date (also some of most recent filing) recording and



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recommending the addition of hot concentrations of Sugar solutions to Cacao Liquor and/or Cocoa Powder in the manufacture of Chocolate, not all of which are without merit, while it is probable that the practice, at its crudest, is as old as the manufacture of eating-Chocolate and of the dry powder or cake forms of the beverage 'Chocolate'.

With these three points established as known facts in Sugar-manipulation and in Chocolate-manufacture, we can now discuss, if for no other reason than technical interest, the preparation by hand of the 'Areados' Sugars of Portugal and of most 'Gur' in India as we found it practised prior to 1912, which led to the mechanical bulk-manufacture of these types of Sugar ("FONDANT SUGAR" of Mr. Koch?) first known inaccurately as "Amorphous Sugar" in England, and later as "Transformed Sugar" more correctly in the U. S. A. These soft-grained Sugars were made also mechanically in large quantities in Germany where they were used successfully in the Chocolate Industry, but more particularly in Portugal where aërated Sugars were in universal demand in cafés for their rapid solubility in cups of coffee and for making a peculiarly smooth and pleasing eating-Chocolate which certainly first attracted our attention.

Until 1912, when the first small mechanical unit (500 pounds per hour) for making 'Areados' Sugars on a continuous process had been erected and was in good running-order in Lisbon (Portugal), and for many years later, it was a common sight to see men sitting on the pavement outside their shops violently stirring pans of slowly cooling, high-boiled Sugar solutions of various degrees of purity until graining started and vast clouds of steam rose from the pans owing to 'Heat of Crystallisation'. These men were preparing the Sugars demanded by the cafés, housekeepers, and Chocolate-makers of Portugal—those 'Areados' Sugars that were so soluble in coffee that a teaspoonful would dissolve before it reached the bottom of the cup, and so soft-grained that they were exceptionally readily ground down to make a smooth eating-Chocolate. The Sugars so prepared consisted at first of irregular small and large lumps which, when cold, were lightly crushed and sifted to the required degree of fineness to suit the somewhat fastidious café-clients who also demanded a gleam of minute sparkling crystals in the finished products. To secure the requisite amount of sparkle was rather a culinary art than a science in those early days, and was more or less controlled by the feel of the Sugars before boiling was started. In addition to the occasional sparkle, a certain 'creepiness' of the Sugar in the bowl was expected, a feature secured by the presence of a very limited amount of Invert Sugar intentionally developed during the preparation or originally present in the more raw Cane Sugars employed. The formation of Sugar crystals large enough (even though very small) and bright enough to gleam by reflected light was undesirable and avoided in those Sugars specifically used for Chocolate-making owing to their relatively hard structure, while some of the brown (less pure) 'Areados' Sugars had a delicious flavor that, in the opinion of most expert tasters, enhanced that of the Cacao in Chocolates made from them.

Almost exactly the same operation was observed in India, particularly in the Madras district where Palm Juice was converted into 'Gur' in immense quantities by innumerable small individual consumers. 'Gur' is usually a very raw-type of Sugar (high in impurities such as natural gums, salts, proteins, and Invert Sugar) and is seldom refined except by the most primitive methods, and, in consequence, is prepared from the boilings of crude juice only with considerable labour and expenditure of much manual energy during the stirring following the boiling to high concentration. It should be noted, incidentally, that Indians are the largest consumers *per capita* of Sugar in the world, much of the Sugar being produced by small individual owners of a few Palm trees for their own consumption or for sale in lumps in the bazaars as a sweetmeat. Chocolate made with 'Gur' is not a practical proposition, nor, indeed, is the manufacture of the dry Sugar on a mechanical basis owing to the huge amount of power necessary for its conversion from the crude, impure juice into the dry condition, as we proved in Koodamoodie where the only available fuel was green wood and the native supplies of palm-juice boilings were fantastically high in impurities inhibiting the crystallisation of the Sucrose.

The first machine erected for the continuous production of 'Areados' Sugars was a small one—and was attached to a Sugar Refinery in Lisbon, Portugal, where 500 pounds per hour of white and brown types were turned out. The 'transforming' equipment was extremely ingenious and was the result of many years' work on the part of Edward Shaw, the engineering genius in the science of heat-transfer, to whom we owe many inventions in the Candy Industry—particularly the 'Continuous Atmospheric Sugar Cookers' of which the last before his death was the 'Microfilm Sugar Cooker'. In conjunction with Baker Perkins Co., Ltd., the Machine Manufacturers, Shaw's cookers have become world-famous in the Candy Industry and are, today, the best hope for the continuous manufacture of Chocolate, in my opinion, through the use of Sugar solutions—the 'Continuous Atmospheric Sugar Cooker' having made possible the *continuous boiling of Sugar solutions* to any required degree for subsequent conversion *into dry Sugar in a continuous manner.*

Let it be noted then at this point that the first continuous production of 'Areados' Sugars was in a relatively small and somewhat primitive *Sugar Refinery* in Lisbon and that, from that obscure beginning, a small but more modernised unit for the manufacture of similar types of Sugar by individual *Chocolate and Biscuit Manufacturers* in England (later in Germany and elsewhere) was next designed by Shaw in collaboration with myself and with the technical staffs of Baker Perkins, Peek Frean, Rowntree, and other famous firms, in which a necessarily condensed but more efficient Sugar refining-unit became an essential part of the economic production of the Sugars. And it should be emphasised that this

was at the time when it was possible for comparatively small users of specialised Sugars to obtain on the open market *large-crystal*, raw Cane and Beet Sugars most suitable for *simple* refining following centrifugal washing. After World War I, 96° Raw Beet and large-crystal Cane Sugars were extremely difficult to obtain, the former soon ceasing to exist altogether, the latter commanding too high a price to justify refining in a small way—and the combination of these facts resulted in a decline of interest in the mechanical manufacture of soft-grained Sugars until a revival of interest in 'Transformed' Sugars in the U. S. between the two World Wars was stimulated by the National Sugar Refining Company offering them in bulk.

The general change in the Sugar Industry was, then, almost entirely responsible for the cessation of manufacture of the soft-grained Sugars by individual Chocolate and Biscuit Manufacturers in Europe in the early 1920's. But previously in World War 1 when, owing to my military service, I was only a very occasional observer of civil affairs, the 'Amorphous Sugar Plant' (as it was then known), with its small Sugar refining-unit, was a perfect god-send in England allowing the conversion into dry powdered Sugar of the moist, dark, raw, small-crystal Sugars that were haphazardly alloted to the Chocolate and Biscuit Manufacturers by the harassed British Government and that could be used direct only with great difficulty and considerable deterioration of the products, and, in any case, could not be ground on a disintegrator. Apart from the advantages in Chocolate-manufacture by the use of high-purity aërated, soft-grained Sugars, the Biscuit Manufacturers found that, owing to their aëration, these Sugars served to reduce the amount of the usual aërating chemicals in the biscuit-formulae and that, when defecated and decolorised to a clean, clear yellow, the less highly refined Sugars of this type gave to the finished biscuits a *natural* 'egg-yellow' color that needed a reduction also in added *synthetic* coloring-matters.

The Lisbon plant in 1912 was, indeed, primitive in operation so far as its attached *Sugar-refining-unit* was concerned, and will surely be of interest here as showing some of the problems with which we were faced. Defecation of the raw Cane Sugar, melted in blow-ups, was carried out with fresh ox blood from the local 'abattoirs', lime, and phosphoric acid; the hot defecated Sugar solution was then filtered in plate-and-frame presses, bleached with 'Blankit', and the clarified liquor further decolorised by passing through six columns of bone-char before going to the 'Transformer Unit'. The 'Transformer Unit' consisted of Shaw's 'Continuous Atmospheric Cooker' in which the clarified and decolorised Sugar solution was concentrated by boiling to the required degree and from which the high-boiled Sugar concentrate passed in a *continuous* stream to the 'transformer' proper. This latter part of the equipment was a well-thought-out combination of a long, strong, wooden, open trough partially metal-lined), some 20 feet long and 18 inches wide, with a strong steel spindle along its length fitted with directed blades that revolved rapidly between combs and moved the Sugar mass along to the final outlet, the Sugar passing from the first water-cooled compartment in a 'doughy' state in the process of crystallising to adjoining steam-heated compartments where the Sugar, drying mainly by its 'Heat of Crystallisation', was tossed into the air to rid it of its residual moisture. From the last compartment, the hot, dry, mostly powdery Sugar was elevated to rocking-sieves, the finer portions falling into long wooden troughs (like bread-troughs) for thorough cooling before bagging, while the small amount of tailings were automatically returned to the first compartment of the 'transformer' for seeding the incoming hot concentrated Sugar solution from the 'Continuous Cooker'.

The later improved modification of this somewhat primitive equipment included one or more large centrifugals for washing the raw Sugars and so resulting in two grades of Sugar—the one, the washed and relatively white Sugar crystals in the centrifugals, the other, the washings containing a large proportion of the impurities (Invert Sugar, gums, coloring matter, etc.), which were defecated separately with lime and phosphoric acid, and decolorised to the required extent by 'Norit' (decolorising carbon) and finally filtered in banjo-filters before going to the 'transformer.' The capacities of the 'Atmospheric Cooker' and 'Transformer' were stepped up to produce 1,000 pounds of dry 'Transformed' Sugar per hour which was sifted either on rocking-sieves or by passing through a high-speed rotary air-separator to obtain any required degree of fineness.

In later years in the U. S. many much more important improvements and additions were made in the equipment—in The National Sugar Refining Co., through the skill and direction of Dr. John W. Schlegel and Mr. Louis Lang, new cookers were installed each capable of producing at least 2,000 pounds per hour of high-purity 'Transformed' Sugar which was air-sifted in high-speed rotary air-separators, cooled, and bagged continuously. In The National Sugar Refinery, Sugar-refining was, to be sure, a highly developed science, and all kinds of Sugar solutions were, of course, available for transformation without having to descend to the use of any such primitive Sugar-refining process as we, the comparatively tiny refiners and *users* of 'Transformed' Sugars for *direct* employment in biscuits and Chocolate in our factories, had had to adopt. In this way it was again demonstrated, as already shown in Germany, that the manufacture of 'Transformed' Sugars *as an economic proposition* had become essentially a Sugar Refiner's process and certainly no longer profitable to the small direct users in the twenties. There was, however, one snag (not insurmountable) from which bulk manufacture and storage of 'Transformed' Sugars by a large Sugar Refinery suffered as compared with immediate using by us smaller fry, and that was the unfortunate character of these Sugars in caking after bagging for any length of time. The difficulty of this problem was never entirely overcome, and was one reason why the greater distribution of the 'Transformed' Sugars was never achieved. The caking of fine-grained Sugars is not, however, confined to 'Transformed' Sugars, the

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same trouble occurring also in finely powdered Granulated Sugar and only partially solved by the incorporation of certain foreign substances such as starch, phosphates, etc., which in our case was undesirable.

The later cessation of manufacture of 'Transformed' Sugars by The National Sugar Refining Co. was not due to lack of demand for the products, though the total output of the several transforming-units was certainly trifling compared with the several millions of pounds of standard Granulated Sugar put out by the Edgewater Refinery. At any rate, for many years after the closing of the large Edgewater Refinery, when the manufacture of 'Transformed' Sugars was stopped mainly owing to difficulties in moving the units to another Refinery with different power and steam-capacity and limited space, the demand for these types of Sugar by Chocolate and Biscuit Manufacturers and makers of 'ready-to-use' dry cake-mixes, etc. continued to reach me personally and was conclusive evidence that 'Transformed' Sugars had a definite place in certain specialised industries. However, there the situation remains today, and no other Refinery has taken up the project, which I can understand since Granulated Sugars, with the growing demand for 'Liquid Sugars', are really the profit-makers *in bulk* compared with which, say, a hundred tons a day of 'Transformed' Sugars are too trifling to be considered by refineries geared to produce in very large quantities those types of Sugars in more universal demand. I might add, without prejudice, that there are too few courageous men in the Sugar Refining Industry generally, unafraid of experimental ventures—a lack that led to only a relatively belated realisation of the importance of 'Liquid Sugars', for example, first pioneered and successfully launched by the more imaginative 'Refined Syrups and Sugars Corp.' whose products were derided as laughable a bare 25 years ago by the more conservative Refiners who, today, are no longer laughing, but profiting by imitations. In the matter of 'Transformed' Sugars, or, at least, the utilisation of aërated Sugars, I hold much the same opinion, and I believe that a continuous process of Chocolate-manufacture through the use of Sugar solutions ('Liquid Sugar' probably) is merely a matter of courage, imagination, and enterprise among progressive Chocolate Manufacturers.

The following Table shows Approximate Particle-size (measured along the longest side) and Apparent Density in air (generally indicative of 'fluffiness' or aëration in the lower densities) of a few different types of sugars of immediate interest. Neither the initial particle-size nor the aëration indicates the value of the Sugars to the Chocolate Manufacturer, but it is the *softness of the grain*, difficult to evaluate except in practice, that enables the 'Transformed' Sugars, for example, to be ground down on a Chocolate roll-refiner so much more easily than are the hard grains of powdered Granulated of considerably smaller initial particle-size. This fact was demonstrated many years ago in an article in the 'M.C.', illustrated by photo-micrographs. It should be further noted in the Table below that the apparent low density in air of 4X and Super-X Powdered Granulated Sugar is also due to aëration *but* entirely to an aëration *between the small particles* of the Sugar rather than *within the Sugar particles themselves* as is mainly the case with 'Transformed' Sugars.

TABLE 1

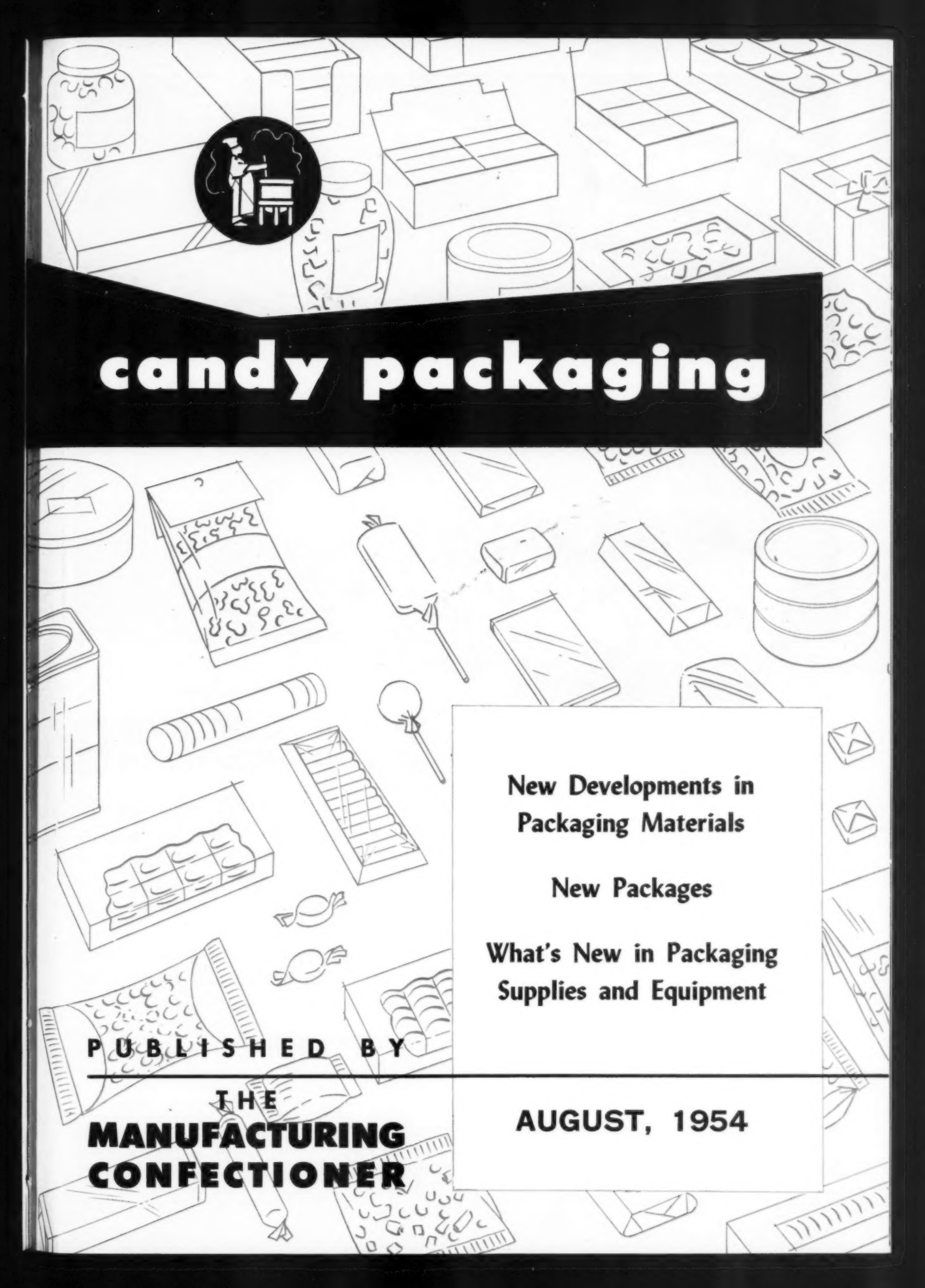
TYPE OF SUGAR	Approx. maximum Particle Size m.m.	Apparent Density in Air
Coarse Granulated	5.0	0.940
Medium Granulated	2.4	0.909
Fine Granulated	0.7	0.882
4X Powdered Gran. (with starch)	0.09	0.775
Super-X Powdered	0.03	0.702
White Transformed Sugar	0.18	0.833
Fine Yellow Transformed Sugar	0.11	0.666

The *real Density* was found for all the Sugars shown to be that of pure Sucrose within small experimental error—1.590-1.584.

Finally, reverting to the subject of *particle-size*, as distinct from *softness of grain*, the 'Fine Ingredients' process patented by Rowntree's and Baker Perkins, in which the Sugar and Cacao Liquor are first reduced to the fineness required for a fine eating-Chocolate *before* being mixed together, would have been possible of being converted into a continuous process for making Chocolate from Cacao nibs (excluding conching) if fine, freshly-ground Sugar could have been delivered in a continuous manner and of constant weight per minute into streams of Cacao Liquor and Cacao Butter synchronised with the Sugar delivery. As it is, the 'F.I.' process has very distinct merits though, possibly as divined by Mr. Koch, the cost of the plant was considered unduly high. Yet its greatest merit in my eyes is that it is fool-proof, as I found to my great satisfaction when erecting and running four of these units in Japan where my staff were all comparative novices in the matter of Chocolate-manufacture. But, with 'Liquid Sugar' now available, the synchronisation of Sugar delivery with those of Cacao Liquor and Cacao Butter, all adjustable for the delivery of any desired quantities per minute through adjustable rotary pumps for the latter and an adjustable piston-pump as normally attached for the manufacture of 'Transformed' Sugar in a continuous manner, a continuous process for the manufacture of Chocolate from Cacao nibs (excluding conching) is not only feasible but has been proved in practice to be commercially practicable. And there this subject also must remain, not for dreamers only, as suggested by Mr. Koch, but until some enterprising Chocolate Manufacture takes it in hand.

The idea of taking Granulated Sugar, dissolving it, boiling it to any degree of temperature, and then adding it to Cacao Liquor in batches, is, of course, out of the question from an economic point of view, a fact that Mr. Koch readily admitted. But, today, we are better served, and the 'Liquid Sugars' of commerce, never having been expensively crystallised in the Refinery are, in consequence, cheaper than Granulated Sugar on the solid basis to the user, giving us some small margin in cost to play with and opening up, quite obviously, the immense possibilities of the manufacture of Chocolate by a continuous process through employment of 'Continuous Sugar Cookers'.

The End



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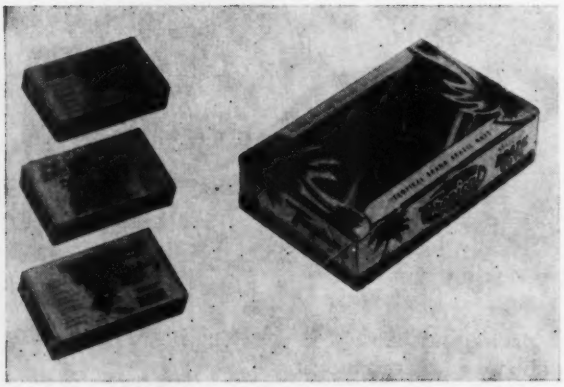

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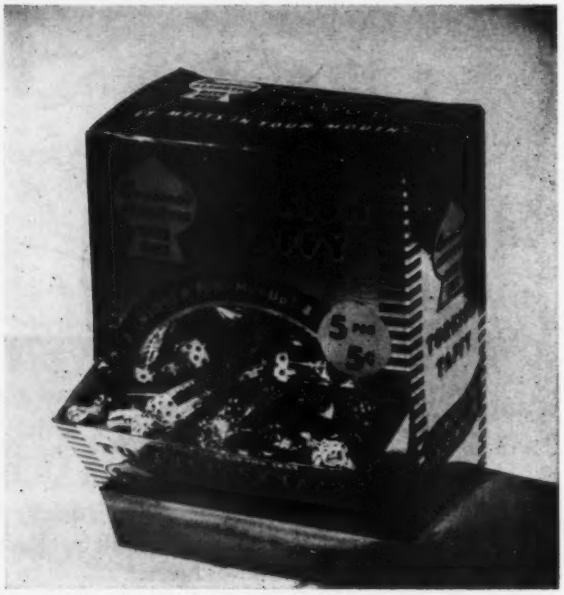

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George H. Sweetnam, Inc.

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SWEETONE PAPER PRODUCTS

Representatives in Philadelphia, Detroit, St. Louis, Chicago, Dallas, New Orleans, Los Angeles and Portland, Oregon.

New Packages

A new product, 'Choc'm', by Frank H. Fleer Corp. of Philadelphia, is now being distributed nationally. It is the first chocolate flavored chewing gum to appear on the market, and is said to represent sixteen years of research on the part of the gum manufacturer. Printed in yellow, red and brown, the carton design gives prominence to the 1¢ price and to its chocolate flavor.

Laminated and printed gold foil and bumper ends are features of the new tray design for Spangler's Hickok Honeycomb Chips. The foil is overprinted in brown and white inks. The bumper ends on the tray give the candy extra protection, and have extra sales appeal.

These bags and window boxes comprise the line of packages prepared for the Hallowe'en season by the Pearson Candy Company of Los Angeles, California.

DOW

it's Saran film

... ADDED PROTECTION

You insure freshness, taste appeal and sales when you package your candy in saran film bags!

When all the freshness and flavor you put into your candies reach the consumer intact, your place among the favorite brands is assured! That's why more and more of America's leading candies rely on the *added protection* of saran film packaging.

Saran film's extremely low moisture transmission rate and its amazing toughness give maximum protection through packing, shipping and shelf-handling. It's crystal-clear for appetizing display . . . and it's velvety-soft for important "feel appeal." Printed or plain, capped or sealed, saran film bags sell more candy for you. Switch now! Let Dow help you give your candy the benefit of *added protection*, added sales appeal with saran film packaging. Write today. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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The same wrap for household use... on THE SATURDAY NIGHT REVUE... and on TODAY starring Dave Garroway. NBC-TV.

The Dow Chemical Company
Plastics Sales PL 584G-1, Midland, Michigan

Please send your new brochure on Saran Film Bags.

Name_____ Title_____ Address_____

Company_____ City_____ State_____

you can depend on DOW PLASTICS

DOW

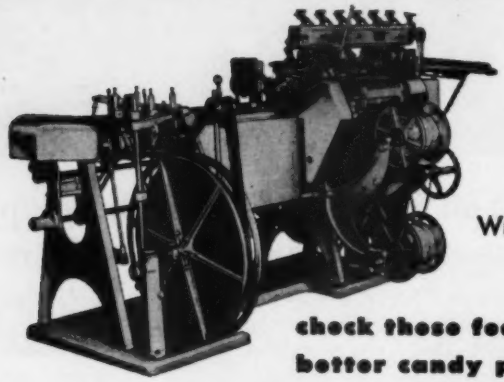
New Packages

Family identification is emphasized in a series of packages of Rockwood Company to merchandise their variety of "Rocklets" chocolate. The cellophane packages have identical design, but vary in color of printing and color of the foil with which the chocolates are wrapped. Each bag has a white printed band across the top, a clear window and a distinctive color band across the bottom. Designed and produced by Milprint, Inc., Milwaukee, Wisconsin.

A cut-out display panel is the feature of a new counter display carton for Sugar Toasted Peanuts by Chunky Chocolate Corporation, Brooklyn, N. Y. A deep cut-out in the carton front permits easy self-service. The carton also forms a shipping container for bulk packed bags of peanuts. Designed and produced by Eastern States Carton Division of Robert Gair Company, Inc., New York.

the standard for packaging speed

Speed is an essential factor in today's packaging. Lynch engineers strive constantly to serve the changing needs of the packaging industry. "More units per minute" is one of their aims in designing Lynch Packaging Machines.



The Lynch Wrap-O-Matic PB

check these features for better candy packaging

- Wraps irregular as well as standard shapes
- Easily adjusts from single to multiple pieces
- Speeds production, lowers scrap loss
- Cuts manpower needs, assures packaging economy
- Maintains dependable production

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This insert printed by Milprint, Inc.

Printed Cellophane, Pliofilm, Polyethylene, Saran, Acetate, Glassine, Foils, Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material.

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More than 600 Riegel Papers are now proving their value for many of the nation's best-selling brands. It is the greatest variety of packaging papers available from any one source.

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Plain • Waxed • Printed • Lacquer-Coated • Laminated

Mr. Rubinate tells of the constant fight of the Quartermaster for increased shelf-life of their foods together with increased palatability. While almost performing miracles along these lines, they have done an admirable job of holding costs to a minimum.

New Developments in Packaging Materials

by FRANK J. RUBINATE, *Chief, Subsistence Division, Container Laboratories, Quartermaster Food & Container Institute*

Presented before the American Association of Candy Technologists Annual Convention, Chicago, June 7, 1954

OVER the past years many types of packaging materials have been developed, most of which are familiar to anyone in production or in the packaging end of any industry. There are many types of cellophane paper designed for specific purposes. Various types of coatings are available. Various strengths to run on specific types of equipment.

Recently there has been a trend toward a modification of polyethylene with a view of giving greater transparency. That, of course, is something of prime concern industrially. For our purpose it is of minor interest.

There are varieties of Saran, some of which are under study in the test mentioned a while ago. There are various combinations of pliofilm. Then there is aluminum foil in many thicknesses.

However, for us the most important are the combinations; that is, taking the materials I have mentioned and combining them either with themselves or with other materials.

From our standpoint, on items which we issue, which we call the B ration, with rare exception we will accept your commercial packages, particularly for domestic shipment. For overseas we may make some modifications, depending upon the destination. In the case of candies, however, except for those hard candies which tend to cake on storage, we are taking your commercial wraps. In fact, almost the entire candy specification may be boiled down to a statement of commercial practice as far as your individual wraps are concerned.

However, when we get into the field of special purpose rations we do have peculiar problems, problems which you will not meet in your own work in this industry. These rations, such as the five-in-one C ration, assault, etc., are designed for emergency use; therefore we have no idea where those rations will be used. They must be ready to withstand shipment, storage and handling in any part of the world.

We learned a lot about packaging of operational types of rations during World War II. However, at that time we started from scratch. There was no time and nothing else to do but the best one could, and I feel that those who preceded me in that period did an excellent job.

We generally plan on storage of our ration items for a period of two years. Recently we have reason to feel that even that is not adequate. The handling they get is much rougher than domestic shipments in the states. We have a stepped-up program, with a shortage of freight cars, a shortage of handling facilities, warehouse space, and personnel. Everything being stepped up means that everything moves faster and there is little time to worry about whether the shipments are being handled gently or not.

Let me outline briefly the procedure that we follow

in arriving at our requirements for our special purpose rations. We realize, first of all, that regardless of what we want we must be able to procure it. It must be capable of production on existing high-speed equipment available in the industry concerned. We would not think of asking for something in a can, for example, if the specific industry does not normally pack in cans. It would mean that it would have to buy entirely new equipment, and in time of war where would the equipment come from?

One of our biggest shortages during any emergency is equipment; so therefore when a new product is presented to our division the first thing we do is check the commercial package, assuming that there is a commercial counterpart of the item. If there is we will examine it and see if it satisfies our needs. If it does not, we have no choice then but to modify the package. We will then select from the available packaging materials those that have the physical characteristics desired. If our main problem is one of moisture protection we will take those that are obviously low in moisture transmission. We will combine that with the other characteristics desired—resistance to fat, resistance to gas transmission—whatever they might be.

Having selected from the group of materials available those which have the desired characteristics, we will then check to see whether or not those materials are compatible with existing equipment. If they are not, we have no choice at the moment but to discard them and to go to something else and narrow down our field.

For this purpose we maintain in the laboratory a pilot plant operation. We have on hand commercial equipment for making bags – heat-sealed bags, I should say – for wrapping and for filling as well as heat sealing and electronic sealing both with and without vacuum attachments. If any material cannot be handled on this equipment we know then that it will not work on similar equipment. For instance, we do not and cannot afford to have an automatic machine such as a Stokeswrap. The number of exchange parts that we would need would require a terrific outlay of money. However, the equipment that we have seals in exactly the same manner. If we have delamination or other trouble, we know it will not run on the other equipment. Many materials have been ruled out for that reason.

Having satisfied ourselves that the materials can be used, we must then check to determine whether or not the material is available in large enough quantities and from more than one source of supply. We cannot, unless we have strong justification, ever include in a specification a requirement for a material made by only one manufacturer. However, we can put it in as an alternate to other materials, assuming it is an alternate that we can use.

Then we consider the cost of the item. While we know that we have to have protection beyond what is needed commercially, we are after that protection at the absolute minimum in cost. In recent months particularly, as you are all aware, the pressure has been to decrease costs. While that has not concerned us too much, because it has been a standard part of our operation for the past five or six years, we are putting greater emphasis on that phase. I will show you in a minute or two how we have been able to get improved protection at a reduced cost.

Having narrowed the field of materials down we then are ready to perform our tests. Items will be prepared on the commercial equipment that we have in the laboratory. They then will be rough handled individually or we may prepare a complete operational ration and put it in storage at any one of a number of temperatures and humidities. We generally use 100 degrees Fahrenheit and 95 per cent relative humidity, 70 degrees Fahrenheit, and 50 per cent relative humidity, or 100 degrees Fahrenheit and 25 per cent relative humidity. In recent years minus 40 degrees Fahrenheit has been necessary and even minus 65 degrees Fahrenheit.

Items are then withdrawn from storage periodically, as is generally the case, and examined – sent down to the chemical laboratory for analysis for moisture pickup, or free fatty acids, if we are looking for things like that. Also they are sent to the laboratory for food acceptance tests. In some instances it is necessary that we contract with some university or industrial organization to get part of our work done. As I will indicate a little later, we, too, have had work done at the Georgia Experimental Station, and we have work being done there now.

In the case of items that are new in their application we will go out on a commercial production run and pay a selected company to make a large enough run to satisfy us that we can work out all the bugs before we go out on regular bids for it. This was done in the case of nitrogen packaging of dried cream in small packets. We ran across many bugs, but they were worked out successfully and we are obtaining some on a regular contract run. A proposal is now in Washington for peanut butter in one and one-half ounce cans. The reason is that the can is so small it is not a common canning practice, and we want to determine what bugs there are, if any, in handling that type of item.

Now in the field of new developments, in 1951 we were severely criticized because it was felt that for items such as our five-in-one ration we were giving more protection to individual items than we should have been giving. We know that when we package dissimilar items, such as cigarettes, candies, cocoa, sugar, and so on, in one unit and then put our protection on the outside we will get an exchange of odors, flavors, and moisture in the unit. It stands to reason that if you have a closed system and you hold those items at high temperatures they will tend to level off and the moisture will go from one end to the other and, of course, those items capable of giving off odors will give them off and those capable of absorbing them will absorb them. So we had considerable work done at the Georgia Experimental Station at which time we got data that proved our point.

At the same time we were making an attempt to find an alternate for aluminum foil packaging which we are using for soluble coffee. Coffee is a little foreign to this group, but is directly tied in with the

work at the Georgia Experimental Station as far as the solution of the problem is concerned. I should like to give you some of the data on that. We attempted to find an alternate, using plastic materials and eliminating the aluminum foil which at that time was in rather critical supply. We used just about every combination of plastic material that was available to us, and we ran our tests in the following manner:

We put the coffee in a can. We know that we do not normally ship that way but we wanted a reference point. Then we put it in a can with crackers, such as we do our B unit in our C ration. Then we put them in another can and with them we put starch jelly discs, which are also a part of our C ration. That simulates the way the items are packed.

The data I have here is only for 200 days. In those items in the can alone, in the cans with biscuits, and in the cans with the starch jellied discs, where the coffee was packed in aluminum, there was no difference at all. The aluminum foil was sufficient to ward off the moisture given off by the other items. However, some of the combinations that we used, such as vinyl and Saran, Saran laminated to kraft, fell down and made miserable showings. The best we could do when we had them in the cans, with the starch jellied discs particularly, was 60 days at 100 degrees Fahrenheit and the coffee had picked up sufficient moisture to make it unacceptable. Other materials were in the range of 35 to 45 days.

Going one step further, since we were mixing items in our accessory bag, we repeated the test, this time putting the coffee in the accessory bag alone, the accessory bag being made of aluminum foil and kraft. Then we took the various coffee packets and put them in the accessory bags with cigarettes, again simulating the way we actually ship. Here our pattern is just about the same, although our shelf life with the non-foil items is a little better. Storage data at the end of 190 days shows that where we used the aluminum foil for the coffee it made no difference. Here we used a few more plastic combinations. The non-foil items were unsatisfactory. The best we could get was four months, and the poorest we got was 30 days.

Some of the materials used were vinyl and Saran combined, Saran and kraft. Polyethylene coated Kraft. Saran and pliofilm. Pliofilm and pliofilm. And cellophane and pliofilm combination.

Of course, the only conclusion we could reach at that time was that we had to stay with the aluminum foil. However, shoftly after that a new material was presented to us at the laboratory. It contained foil but instead of the foil being .0001 thick it was .00035, roughly one-third the amount we were using. On the inside was included .0001 polyethylene. The outside was laminated to a 25-pound sulfite.

We checked that against our standard coffee packet. We put it in storage directly exposed to the high temperature of 100 degrees and 90 per cent relative humidity with thse results: Without any rough handling of the package we got 18 months at 100 degrees Fahrenheit and 90 per cent relative humidity with the new material and only eight months with the old. When we flexed the packages prior to putting them into storage we still got one year with the new material and approximately five and one-half months with the old material.

It was so amazing to us, in fact, that we reran the tests. We don't generally expect that little foil in there to do that good a job. But an excellent job has been done in laminating in recent years.

Incidentally these are composite figures covering three manufacturers, because we generally do get as many manufacturers as we can.

The result is that as far as we can estimate at the present time our cost of those coffee packets should decrease by about 40 per cent. Of course, we will be saving two-thirds of the aluminum foil that we formerly used for coffee packets.

That material is now being used for many dehydrated soups. It is in the proposed spec for coffee at the present time and it is being used as a solution for the problem of exchange of odors, moisture and flavors in the five-in-one ration by segregating the items. Our candies now are in the pouch made of this new material. Our cigarettes are in another pouch made of the same material, and our other items are similarly segregated. So I think that as far as we are concerned the most significant advance in the development of new materials has been in the field of laminations rather than in the development of any single material.

The End

Cooper-Styled folding candy boxes for a record Christmas business
WRITE FOR DISPLAY BROCHURE OF BOX STYLES AND PRICES
COOPER
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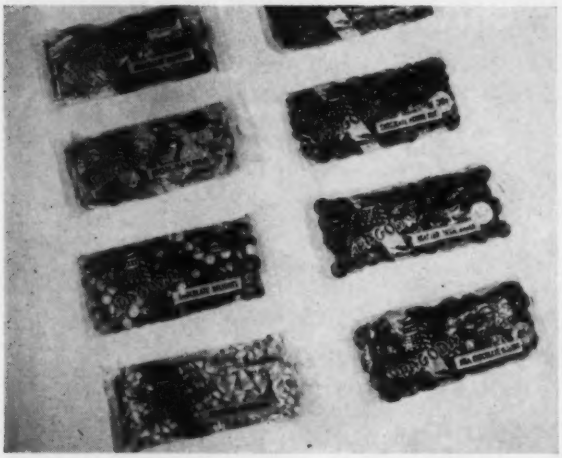
New Pac

Three of the new packages of the T. A. White Candy Company have appeared on the market, which resulted from an extensive survey of factors influencing consumer preference at the point-of-sale.

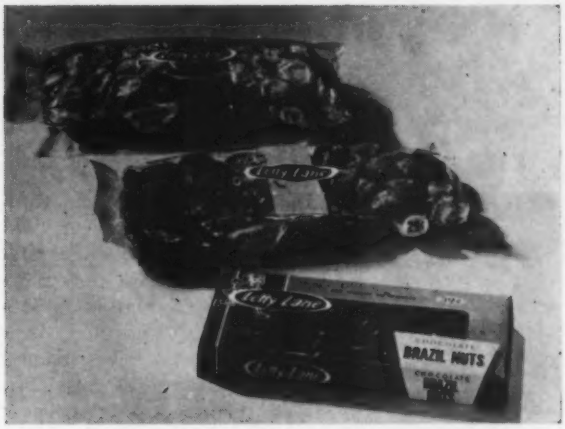
The Brazils is a 12 ounce, one layer, dark colored extended padded top box. It is lithographed in four colors. The Par Excellence package is made in one pound and two pound sizes with two layers and extended cover. It is printed in solid scarlet with writing in white reverse. The bag line consists of about 25 items produced by rotary-litho in three colors. Only the name of the candy and price are changed for each item.



Pagoda Candy Company, Reading, Pa., has adopted a family of printed bags to identify its line of candies. The design is identical on all bags, but the color scheme is designed so that type of candy. The printing is designed so that the bags will be displayed laying on their sides. Produced by The Dobeckmun Company, Cleveland, Ohio.

Vivid colors, Lassiteen printed on cellophane, make an appealing new package for the Party Mints and Butter Puffs of Whole-Sum Products Co., Philadelphia. The copy, printed on the bag in blue, stands out against a maroon background flecked with blue and white confetti. The candy itself shows through an unprinted window in the bag. The solid printed area and the unusual shape of the window give this package a strong eye appeal when displayed with more prosaic packages. Designed and printed by Lassiter Corporation, Charlotte, N. C., and New York.

Packages



"Letty Lane" has come alive, in the person of an energetic little girl, sporting pigtails, running across the new packages of Letty Lane Company. Bringing the name "Letty Lane" to life is the latest step in the company's long range program of package improvement. Original plans to use a young woman as the Letty Lane trademark were scrapped, as consumer research indicated that the shopper's association of her children with the litle girl on the package resulted in a higher percentage of impulse sales than when a young woman was pictured.

"Summer Pick-Ups" is the title of a display stand for a group of new packages to retail at 39c. A cardboard display stand, measuring 10¾ inches by 14 inches at the base, and standing 28¾ inches high, is furnished free with a 60 box order. The line consists of Pectin Jelly Cuts, Pure Toasted Biscuits, Butter Mint Leaves and Pectin Jelly Brilliants, each in seven ounce packages, and Frozen Milk Caramels and Pure Cocoanut Bon Bons, each in 5½ ounce packages. The shelves of the display stand hold four boxes each, with a place for 36 boxes in the rear of the stand. Each of the packages are single layer open-faced trays, cellophane over-wrapped.

A corrugated mailing carton is being furnished by Jianas Bros. Candy Company, Kansas City, Missouri, as a service to their customers. The carton holds three tins of candy, and features triple thick ends for excellent protection in the mails. It is printed in green on kraft corrugated, and instructions are in English and French. The tins are packed on their sides, so that they display well opened on retail counters. Produced by Hinde and Dauch.

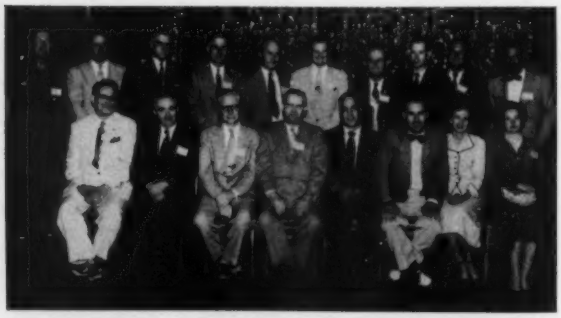
Confectioners' Briefs

Harold P. McGlynn

THE Southern Wholesale Confectioners' Association held their very successful 32nd annual convention in Jacksonville, Florida, June 22 to 25. Harold P. McGlynn, McGlynn Candy Co., Inc., Montgomery, Ala., was named president for the coming year. Mr. McGlynn announced that the new board of directors had adopted a program effective immediately which involves expansion of SWCA activities to add field work, area meetings, new member services, step up the SWCA's own trade journal, The Southern Candy Jobber, and to cooperate even closer with the National Confectioners Association and the National Candy Wholesalers Association.

As the first step in the wider program, O. V. Erickson was appointed executive secretary-treasurer. Alice Erickson, who resigned as executive secretary during the convention, is to continue as editor of The Southern Candy Jobber.

It was also announced that the SWCA's 1955 convention site will be Roanoke, Va., July 14-16, 1954.



The newly elected board of directors of the SWCA; Seated l. to r.: Clarence E. Morgan, Morgan Bros., Inc., Ashville, N. C.; I. T. Brewer, Victory Specialty Co., Roanoke, Va.; W. H. Weatherly, Jr., W. H. Weatherly Co., Elizabeth City, N. C.; President Harold P. McGlynn, McGlynn Candy Co., Inc., Montgomery, Ala.; Alvin E. Bell, A. Karcher Candy Co., Little Rock, Ark.; Executive Secretary-Treasurer O. V. Erickson, Southern Candy Jobber, Editor Alice J. Erickson and Assistant Secretary Kay R. Morgareidge, all of Atlanta, Ga.

Standing: O. J. McLane, Jas. O. Welch Co., Atlanta, Ga.; Sam E. Sawyer, Sawyer Candy Co., Elba, Ala.; E. Ray Jones, Jones Candy Co., Owensboro, Ky.; E. F. Proffitt, Proffitt Wholesale Co., High Point, N. C.; W. L. Sutherland, Salyer Candy Co., Kingsport, Tenn.; J. E. Going, Going Wholesale Co., Union, S. C.; C. R. Starkey, Starkey-Mathews Co., Suffolk, Va.; W. A. Liddell, Liddell Candy Co., Shreveport, La.; R. L. McTigue, Albany Candy Co., Albany, Ga.; and John Tomberlin, Tomberlin Cigar and Candy Co., Jackson, Fla.

The preliminary report of the U. S. Department of Commerce on Confectionery Sales and Distribution for 1953 has just been published, and shows that sales of confectionery in 1953 at the manufacturers were a round billion dollars. The average manufacturers price remained steady at 36.6 cents per pound. The total tonnage advanced to 2,730 million pounds, an increase of 20 million pounds. However, the population increased in greater proportion, resulting in a drop of one-tenth of a pound in average per capita consumption, to 17.2 pounds. The complete report will be published at an early date.

Sperry Candy Company has constructed a fleet of "Chicken Wagons." Each Wagon is equipped with a speaker system for records, tape or radio. These "Chickens" will be circulated about the country to be entered in parades, civic events and other public gatherings. A cowboy rides atop the chicken during appearances tossing Chicken Dinner samples. Local newspaper advertising plus point-of-sale material will be used when appearances are scheduled.

Charles O. McAfee, Jr. has been elected executive vice-president and secretary-treasurer of the McAfee Candy Co., Inc. **Charles O. McAfee, Sr.** was re-elected president and chairman of the board.

Robert I. Johonnot has been made sales manager of the bulk and package division of **Leaf Brands, Inc.** With the addition of Johonnot, **Mr. Sam Shankman,** executive vice-president, indicates that a realignment of the sales department has taken place with executive personnel assigned as follows: **Marshall S. Leaf,** vice-president and director of advertising, sales promotion and merchandising; **Rolfe M. Lobell,** vice-president in charge of sales; **Robert Goldstein,** sales manager of the wholesale and vending division; and **Jim Murphy,** director of national variety account sales.

Abe Josephsohn was elected president of the National Confectionery Salesmen's Association at its annual convention. **Robert M. Kelly** was re-elected secretary-treasurer.

Supply Field News

A. C. Cleghorn has been appointed executive vice-president of National Aniline Division of Allied Chemical & Dye Corporation. This position was created to spread the executive load of this division.

Herbert D. Berger, for many years a salesman in the southwest for Felton Chemical Company, has been transferred to that company's Chicago office. Mr. Berger will give additional localized service to Felton's customers in the Chicago metropolitan area as well as in parts of the midwest, where he will continue to travel frequently. **Mr. Robert Burke** has been appointed manager of the Chicago office for Felton.

A. V. Peterson has been named Sales Manager of Packaging Machine Sales Department of Lynch Corporation. He replaces **M. V. Girkins,** who retired after a number of years with the company.

CALENDAR

August 7—Kansas City Candy Club monthly meeting, Town House, Kansas City, Kansas.

August 7—Northwest Candy Club monthly meeting, The Grove Caff, Grosvenor House.

August 10 and 24—Semi-monthly meetings Detroit Tobacco & Candy Round Table, Hotel Detroiter.

August 14—Carolina Confectionery Salesmen's Club monthly meeting, at Kuester's, Charlotte, North Carolina.

August 18—Southern California Association of Tobacco Distributors, Inc., Chapman Park Hotel, 6th & Alexandria Sts., Los Angeles.

August 20—The Denver Association of Manufacturers Representatives monthly meeting, Daniels & Fisher Club Rooms.

August 21—Great Plains Candy Club monthly meeting, Castle Hotel, Omaha.

August 27—Chicago Candy Club, Picnic, The Emilia Ehrhardt Picnic Grove, Park Ridge, Illinois.

August 28—Dallas Candy Club, monthly meeting, Semos Restaurant, 505 Fort Worth Ave., at 12:30.

August 29-September 1—Boston Candy Show, Statler Hotel, Boston, Mass.

September 12-15—Confectionery Caravan Show, Palmer House, Chicago, Ill.

September 19-22—Philadelphia Candy Show, Ben Franklyn Hotel, Philadelphia, Pa.

September 21—Candy Executives Club Shore Dinner, St. George Hotel, Brooklyn, N. Y.

September 23-26—Packaging Machinery Manufacturer Institute, annual meeting at Grove Park Inn, Asheville, North Carolina.

September 24-25—Annual Convention, Michigan Tobacco & Candy Distributors Association, Statler Hotel, Detroit, Mich.

September 27-30—Society of Industrial Packaging and Materials Handling Short Course, Congress Hotel, Chicago, Ill.

September 28-30—Natural Industrial Packaging & Materials Handling Exposition, Chicago, Illinois.

October 1-30—Indiana Tobacco & Candy Association annual convention.

October 10-13—National Automatic Merchandising Association Convention and Exhibit, Washington, D. C.

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Helpful Books for Candy Plant Executives

Profits Through Cost Control for Manufacturing Confectioners

by Frank Buese and Eric Weissenburger

This booklet is a compilation of five articles which appeared in The Manufacturing Confectioner during the last two years. This material deals with the problems of cost control in candy plants, including planning for profit, controlling material costs, labor costs, distribution costs and overhead costs. The emphasis is on planning operations so that a profit will be made, and in detecting those factors which will adversely affect profit before they can seriously cut the planned profit.

A Textbook on Candy Making

by Alfred E. Leighton

Here is a textbook where the reader can learn the basic fundamentals of candy making, the "how" and "why" of the various operations in non-technical terms. Particular attention is given to the function of raw materials, and why each is included in a formula.

How to Salvage Scrap Candy

by Wesley H. Childs

This booklet is a complete revision of the author's work "Modern Methods of Candy Scrap Recovery" published in 1943. A considerable amount of information has been collected since that time on methods and techniques of salvaging scrap candy. This booklet covers all types of candy, and gives many practical and economical ways of converting scrap candy into a useful form for re-use.

Candy Production Methods and Formulas

by Walter Richmond

This is a big 640 page book designed to give practical information on (1) ingredients and cooking action, (2) mixing, coating, etc., (3) trouble shooting. Over 500 formulas are given, with the methods of processing, and their reasons why.

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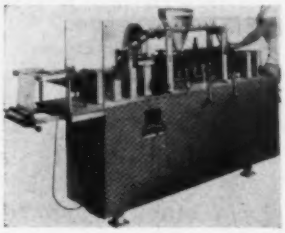
What's New in Candy Packaging

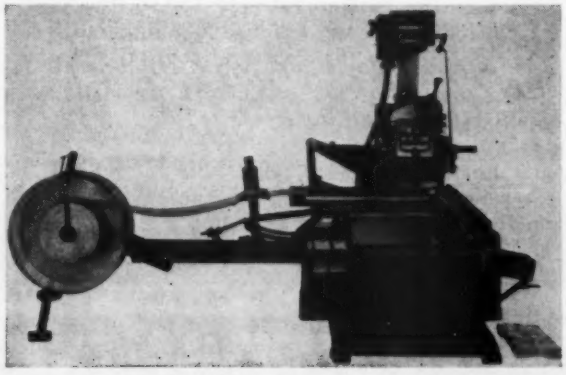
A New Code-Dating Attachment is available that makes sealing, header labelling and code-imprinting a single simultaneous operation. Up to five digits of an impression-type code-date is possible with the attachment. It is located in the center of the seal 1/8" back from the front edge. A hole punch is available for punching holes through the header label and bag.

For further information write: Amsco Packaging Machinery, Inc., 31-31 48th Ave., Long Island City 1, N. Y.



A new bag forming, filling and sealing machine has been developed. Called a "Wrap-Trap" this machine handles virtually all modern heat sealing materials such as aluminum foil, saran, and polythylene laminations, coated paper, etc. The "Wrap-Trap" operates in clear view at table height. It is surprisingly compact, measuring 24 inches in width, 9 feet in length and 60 inches in overall height.

For information write: Triplex Industries, Inc., Riverdale, Illinois.



A new label imprinter has been developed for printing partially printed labels in roll form. This machine eliminates the need for stocking a wide variety of different labels, and one stock label can be kept on hand, and individual candy names, with weights and ingredients may be added for any type when it is needed and in exactly the necessary quantity. This machine

New Woodman labeler cuts costs up to 70%

For immediate profits install a Woodman Rotary Saddle Labeler. It usually pays for itself in less than a year.

YOU CUT COSTS, get a smoother operation when bag tops are sealed and labels automatically applied with Woodman's new Rotary Saddle Labeler. Tests conducted in large plants for over two years prove it the most versatile and efficient machine ever developed. It does the work of three operators on jaw-type closures, has all the speed of a rotary heat sealer and is simple to operate and maintain. It can handle any shape bag in widths from 3" to 8½". After your bags and labels are tested in our plant, the Woodman labeler is guaranteed to perform to your most rigid specifications.

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☐ Please have your representative call on me.

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Company_____

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City & State_____

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PACKAGE YOUR CANDY IN
RE-USABLE BARET WARE CONTAINERS

A real treasure of a new promotional item, this imported Treasure Barrel sells on sight, boosts impulse purchases, makes ideal candy container. Attractive golden handle adds million and one reuses. Tight lid insures freshness. A sure-fire eye-catcher in rich, velvety, tropical colors. 4⅜" inside, 5½" outside, gold lacquered internally. 40 to a carton, just 98¢ each.

Profits zoom when candies are displayed in this beautiful, yet durable Baret Ware metal container, newly imported from England. Baret Ware products, in variety of styles and sizes, gives big boost to point-of-sale buying. Lightweight, strong, and inexpensive — delightful for gift, holiday-time giving.

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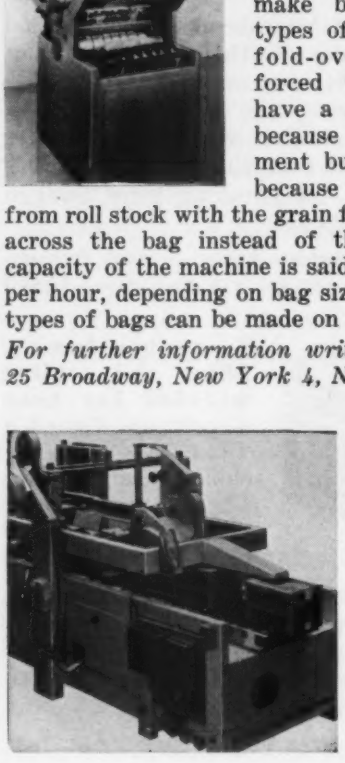
prints at the rate of 80-100 per minute, and registers the printing exactly where wanted. Type is quickly changed, and comes in a variety of sizes and styles. For further information write: Markem Machine Company, Keene 40, N. H.

Renka Bag Making Machines, made in Holland, are now represented in this country. This machine will make bags from several types of films with either fold-over or string-reinforced tops. These bags have a stronger top, first because of the reinforcement built in, and second because the bags are made from roll stock with the grain for the film running across the bag instead of the long way. The capacity of the machine is said to be up to 20,000 per hour, depending on bag size. Twelve different types of bags can be made on this machine.

For further information write: Geveke & Co., 25 Broadway, New York 4, N. Y.



An automatic gluing and taping machine is featured in a new case sealing machine. Both tops and bottoms of corrugated or cardboard containers are closed with a double-seal in the same operation. The operation is entirely automatic. Standard machines are easily adjustable for cartons sizes of 10″ to 22.4″ long; 5.1″ to 13.8″ wide and 4.9″ to 17.7″ high.

For further information write: Clybourn Machine Corporation, 6481 Q. North Avondale Avenue, Chicago 31, Illinois,

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Technical Literature

Regulatory Problems in Food Flavoring

J. W. Sale, Amer. Perfumer & Ess. Oil Review, Vol. 63, Nos. 3, 4, 5 (1954)—The FDA must have sufficient knowledge to (1) determine suspect ingredients, (2) check household flavoring extracts for strength, (3) judge adulterants likely present in suspect flavoring, and (4) decide whether a flavor or flavored food is misbranded. The several classes of flavoring are given. The flavor constituents of fruits are tabulated. Toxicity of substances such as allyi alcohol and its esters preclude their use as flavoring materials. Analytical methods are reported. A good general article of interest to makers and users of flavors and flavored foods.

Cocoa Bean Tests 1952-1953

Gordian-Max Rieck, 84 plus III pages, illustrated, Gordian, Hamburg, Germany, 1953, price $4.00.

This book resulted from a suggestion of Mr. Wollny, publisher of the "Gordian" that the results of experiments conducted between May 1952 and April 1953 be summarized. The first four chapters, Production of Cocoa Beans, World Exports of Cocoa Beans, World Imports of Cocoa Beans, and Price Development of Cocoa Beans offer statistical information of value. Chapter V and the balance of the book reports the Cocoa Bean Tests made on raw cocoa from 23 producing countries, including Gold Coast, Nigeria, Ivory Coast, Cameroons, Togo, San Thome, Fernando Poo, Belgian Congo, Liberia, Brazil, Equador, Venezuela, Trinidad, Granada, Dominican Republic, Haiti, Jamaica, Mexico, Costa Rica, Panama, Ceylon, Java and Western Samoa. Two pages are devoted to each country. On one, a map depicts area discussed and

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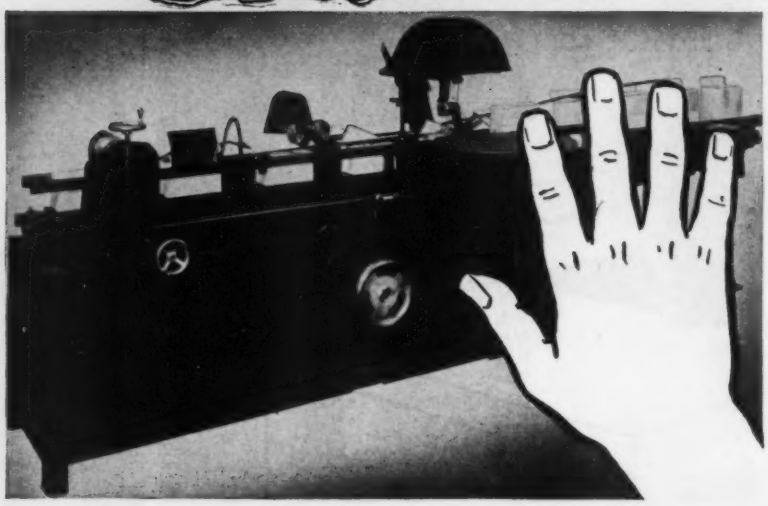
Peters Packaging Idea ...



Here's a packaging machine 'Manufacturer X' wants to keep for himself!

'Manufacturer X' recently purchased a new Model CCY Peters Carton Folding and Closing machine. He is using it in a packaging operation which was previously impractical.

Recently we asked him if we could talk about his example of success with this Peters machine. His answer was, "We'd rather you wouldn't. We don't want to deliberately give away our 'discovery' to competitors."

We still cannot say here who this manufacturer is, but we can say this: His experience can be yours. It certainly pays to investigate this high speed Model CCY Peters Packaging Machine for folding and closing hinged, top-opening cartons.

Write, wire or call for all the facts. Do so soon.

Peters MACHINERY COMPANY
4714 Ravenswood Avenue
Chicago 40, Illinois

lists the area, population, foreign trade, trade connections, shipping ports, cocoa trade, cocoa crop year, trade names, cocoa exports, raw cocoa exports to Germany, and ratio of (area) cocoa exports to total World exports. On another page, two clear photographs of cocoa beans (at least 15 beans per photo) illustrate the text. The weight of the standard sample of 100 beans, general and special characteristics such as color of shell and odor and number of large, medium and small beans with corresponding weight, size of beans (weight, length, width and thickness), and defective appearances in the standard sample. Such arrangement makes for easy comparison of the products of different areas by the reader.

The book is printed in both German and English on high quality paper. We salute the *Gordian* for this treatise.

Gloss, Its Definition and Measurement

V. G. W. Harrison, 145 plus VI pages, illustrated (diagrams) Chemical Pub. Co., 1949, price $4.00.

This monograph is a critical review of the literature on gloss. The physical factors influencing our sensation of gloss are dealt with in Part One. The physiological and psychological factors which contribute to our sensations of gloss are detailed in Part Two. Various attempts at practical gloss measurement (Ostwald-Klughardt method, the "objective" glossmeter, the Goerz and Askana glossmeters, the polarization glossmeter, and the goniophotometer) are discussed in

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Part Three. Part Four summarizes our knowledge of gloss.

This book, although written apparently for those in the paper trade, should be of value to students interested in the evaluation of gloss or lustre of other materials, for example, candy. Gloss is impossible to express numerically. It is not a single sensation: it is a complex of at least three simpler sensations—sharpness of mirror image, variations in the brightness of the surface when viewed at different angles, and the parallactic effect in which we seem to be looking at one surface through another. A list of 180 references increases the value of this book.

Application of Formamide as an Extraction Solvent with Karl Fischer Reagent for the Determination of Moisture in Some Dry Food Products

E. A. McComb and H. M. Wright, Food Technology, Vol. 8, No. 2 (1954)—In determining moisture in dry food products (beans, cake mix, dried whole eggs, egg noodles, oatmeal, potato starch, rice, wheat, and powdered samples of garlic, onion, orange and tomato), the Karl Fischer method with formamide offers advantages of speed, simple manipulation and good precision over the more commonly used procedures.

Vanilla-Like Synthetics

L. C. Cartwright, Amer. Perfumer & Ess. Oil Rev., Vol. 63, No. 2 (1954)—Data on the volatility and solubility (water, alcohol, propylene glycol and mixtures) for propenyl guaethol, bourbonal, vanillin and coumarin are reported.

The Lead, Zinc and Copper Content of Foods

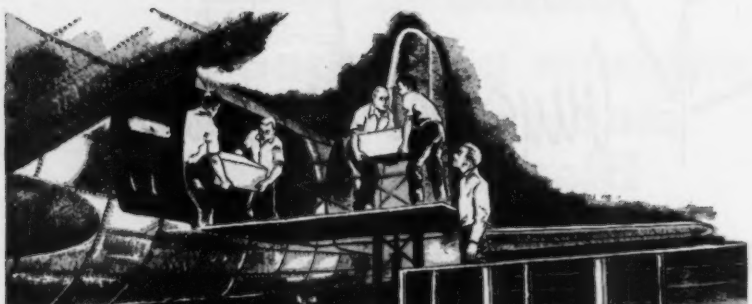
D. Larkin, M. Page, J. C. Bartlet and R. A. Chapman, Food Research, Vol. 19, No. 2 (1954)—Canadian processed foods totaling 171 were analysed. These included powdered skim milk, powdered whole eggs, shortening, flavoring materials, canned fruits, cocoa, cream of tartar, and brown and granulated sugar. In general, the metallic content was found to be satisfactory.

Cocoa

Eileen M. Chatt, 302 plus XVI pages, illustrated, Interscience Publishers, Inc., 1953, price $8.50.

The wide scope of this book is not apparent from the title. The 12 chapters, beginning with the historical aspects of cacao and ending with information on the economic importance of the cocoa and chocolate industry, are logically arranged. Such broad coverage of a complex subject is unusual in one book. The author's ability at compiling and condensing information yet writing in a style which main-

Another Case History from the Files of CHAMPION:



Problem: A Michigan account* set up on a regular shipping schedule basis found themselves out of bags one night as a result of an unanticipated sudden increase in business.

Solution: A phone call to **Champion** and **Champion's** own plane delivered enough bags to keep production going until the regularly scheduled truckload arrived at their plant.

Moral: Prompt service, timely delivery, design ideas, production help—they all go hand in hand with the top quality bags and roll stock produced by **Champion.** For proof, see one of the twenty-five **Champion** Packaging Specialists located coast-to-coast or call or write us today.

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AUGUST Vol. 14, No. 4 1954

tains interest at a high level meets with this reviewer's approval.

The book may be divided into five sections with the historical aspects adequately covered in the first chapter. The second so-called section might be the next five chapters dealing with cultivation. These present the subjects of Botany, Cultivation, Diseases and Pests of Cocoa, Chemical Changes in the Maturing Fruit, and Fermentation and Drying. The third section on manufacturing discusses the processing of Chocolate Liquor, Cocoa Butter and Cocoa Powder, and Chocolate—three chapters. Perhaps the fourth section would include the two chapters, Nutritional Values of Cacao Products and Methods of Analysis. And the last section, one chapter, The Cocoa and Chocolate Industry covers the economics and production data.

Numerous references to the literature are made and a four-page Author's Index increases the value of this book. The illustrations have been carefully chosen. This treatise belongs in the library of every food plant utilizing cacao products.

...one PERSON
...one FINGER
...one TOUCH
...AND Automatically YOUR PRODUCT IS PACKAGE-WRAPPED AT 3 to 5 units per second!
SITRUE TISSUES
Unbelievable savings in time, labor and materials are yours with the Campbell Wrapper. Automatic continuous feeds and deliveries combined with easy, simple operation permits one person to tend and operate several machines at one time in many cases. Then too, because no trays or stiffeners are required unless desired, you cut material costs from 25 to 50%. With the Campbell Wrapper packaging production soars to new heights too, for it automatically crimps, heat or glue seals your products, in any type wrap material, at average speeds of 100 to 300 units per minute! Wraps regular or irregular shaped products — single or multiple per unit with equal ease and speed. Simplified adjustments require minimum down-time for size change-over. Whatever your product—investigate now, how you can save with the Campbell Wrapper.
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View of Stokes and Smith Automatic STOKESWRAP Machine packaging Nestle's Semi-Sweet Chocolate Morsels in 6 oz. double cellophane packages.

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Whether you manufacture food, candy or drugs, you'll find money-saving advantages in packaging with a STOKESWRAP. This versatile machine forms, fills and seals packages of any approved heat-sealing film, paper, or foil. It takes the printed or unprinted web from the roll—single, double or laminated—at speeds up to 6,000 per hour depending on material, web and size of package.

STOKESWRAP'S high speed, neat, accurate production and sturdy construction add up to savings in time, labor and material.

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If your product is a cream, oil or juice concentrate, ask about STOKESWRAP *liquid packaging.*

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fmc TRADE MARK

The Golden Achievement Company and their advisors hold a discussion concerning orders, finished product inventory and packaging requirements. C & H advisors looking on are, left to right, Frank Cavallini, John Butterfield, Frank Tippett and Al Thompson.

Norman Hutson, Fleer president, is backed by Gordon Sevold and Walter Diemer of Fleers and Maurice J. Kelly of Junior Achievement while telling four achievers about Dubble Bubble.

Walter Diemer, Fleer works manager (left), and Fred Lennig, Plant engineer (right), discuss manufacturing problems with two achievers.

Advisor Frank Cavallini points out to achievers that the lacquer used to finish the kitchen tool hanger is an expensive item and wasteful use of the product will cut into the company's profits.

Teaching Youth the Meaning of Profits

PROFIT—does today's youth understand the incentive of profit? Are we giving them the correct perspective or are we leaving to chance the understanding of our American Capitalistic System?

The answers can be found in the Junior Achievement learn-by-doing program in which teen-agers learn about business by actually owning and operating their own miniature corporations. It is perhaps natural that firms in the confectionery and allied businesses should be among the leaders in this dynamic program which teaches youth the fundamentals of our private enterprise economy.

Norman P. Huston, president of the Frank H. Fleer Corporation, Philadelphia, makers of Dubble Bubble gum, explains that Junior Achievement, Inc., is a national non-profit organization which makes it possible for high school students to gain pre-business experience by organizing and oper-

Advice on safe working practices and efficient production techniques is expected of the business advisors working with Junior Achievement. Advisor Al Thompson, at left, is observing two boys as they work at a sanding machine in the C & H San Francisco club. Advisor Frank Tippett is demonstrating the efficient way to use a drill as a vertical sanding machine.

The Sale of corporate stock and issuance of stock certificates give Junior Achievement members a practical understanding of corporation financial practices. Frank Brueheim, who advises members of the C & H sponsored club in Crockett, helps them plan and keep a complete set of corporate books.

ating their own miniature corporations.

The members of the little companies sell stock, elect officers and work under the guidance of adult advisers to manufacture a product or sell a service, earn a profit or show a loss, and learn first-hand a knowledge of business principles.

Company membership averages 15 boys and girls, capitalization about $100. Each junior company is sponsored by an adult business organization and advised by three employees of the sponsoring firm. Members of the groups are recruited in high schools through the co-operation of school authorities.

The boys and girls themselves decide upon an article to manufacture or a service to perform, go into production, keep their own books, handle their own banking, advertising and selling. They serve as both executives and workers, and learn in miniature the problems of labor and management that are part of the business life of any company.

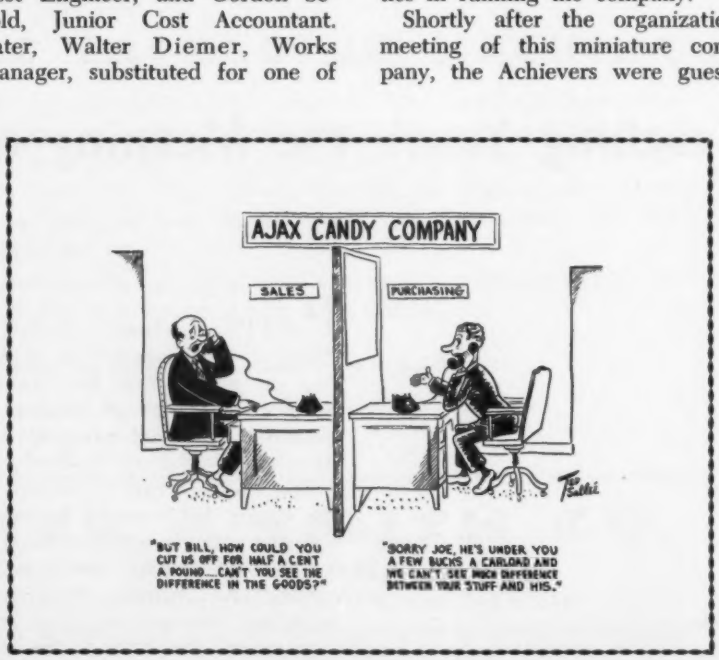
It is probably very natural, according to Mr. Huston, for a chewing gum manufacturer whose business is confined very largely to youngsters to become interested in Junior Achievement. This interest led originally to financial contributions to Junior Achievement, later to participation on the Philadelphia Board of Directors of Junior Achievement, and eventually to sponsorship of one of the Junior Achievement companies in the 1952-1953 season.

The company which Fleer sponsored was the Merry Woodcutters Company which completed its short but intense life in May 1953 by paying back to the original investors every penny which the investors had paid for stock and, in addition, paid a 6% dividend after only 30 weeks of operation from date of organization to date of liquidation.

When the Fleer Corporation became a Junior Achievement sponsor, Mr. Huston appointed a team of three employees to counsel the Merry Woodcutters – L. J. Aubrecht, Management Research Analyst; Rudy Hohagen, Wage & Cost Engineer; and Gordon Sevold, Junior Cost Accountant. Later, Walter Diemer, Works Manager, substituted for one of the original team who became ill. It is interesting to note that none of the team of Advisers was a top management official—all were junior executives, who, through their activities with the Junior Achievement group, were able to apply a number of their own ideas of management without having to filter these through any top management brass.

While mention was made earlier of the profitability of the Merry Woodcutters Company, Fleer people feel that by all odds the greatest values which came out of the program were those values which the Achievers got by their activities in running the company.

Shortly after the organization meeting of this miniature company, the Achievers were guests


AJAX CANDY COMPANY
SALES
PURCHASING
"BUT BILL, HOW COULD YOU CUT US OFF FOR HALF A CENT A POUND....CAN'T YOU SEE THE DIFFERENCE IN THE GOODS?"
"SORRY JOE, HE'S UNDER YOU A FEW BUCKS A CARLOAD AND WE CAN'T SEE MUCH DIFFERENCE BETWEEN YOUR STUFF AND HIS."

of the Fleer Corporation at the Fleer plant. Each Achiever spent a morning with his counterpart in the Fleer Corporation, observing the work which the Corporation executive performed on a normal morning. They merely observed and did not participate. Then, over a long luncheon in the company cafeteria, attended by all of the Achievers and Fleer executives, questions were asked by the Achievers and answered by the qualified company individual. Many of the questions were searching, others merely showed the inexperience of a group of teen-agers in business operation, but the net result of the whole day was that this group of Achievers, just starting in business for themselves, had been able to experience a day with the executives of a going business.

Naturally, in its short life, the Merry Woodcutters Company never did overcome all of its problems but, nevertheless, was able to produce a very creditable financial record.

Despite the interruption of Thanksgiving and Christmas holidays, a wave of influenza, and a change of product line after the first eight weeks, the Merry Woodcutters Company was rolling along in good enough shape by March, 1953, to produce a 15-minute television program on WFIL-TV (American Broadcasting Company). This program depicted, with the aid of the Fleer Advisers and Mr. Hutson, the activities of their company and, in capsule form, the story of their successes and failures to date. That program could have been taken by any adult company just starting in business as an excellent warning of the problems which any newly started company runs into and, also, as an indication of the situations which arise while overcoming the problems.

At the end of the school year, when this Junior Achievement company was liquidated, the Fleer Corporation evaluated the results of this effort as follows:

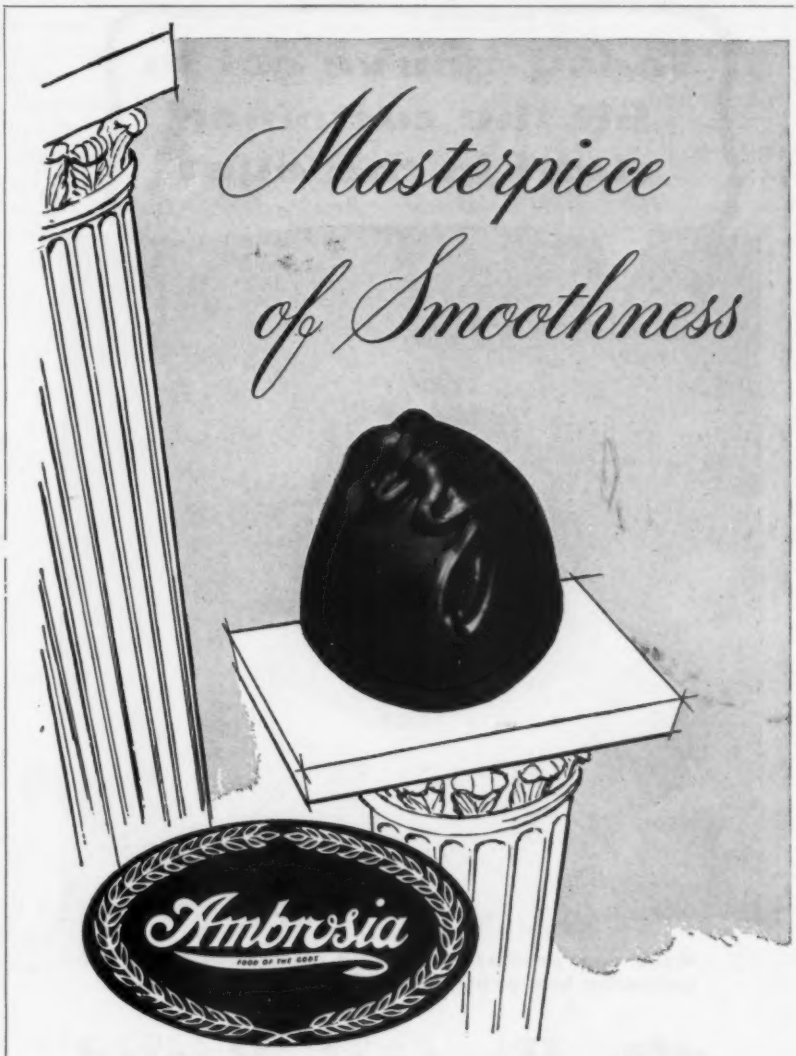
(1) All company people had been familiarized with the very valuable work being done by Junior Achievement in helping high school youngsters to understand the workings of the American economic system, not by being *told* about it but by actually *participating* in it.

(2) The Achievers themselves had had the experience of working cooperatively with others of their own age group in a business venture embracing Purchasing, Manufacturing, Selling and Financing.

(3) The Company counselors had gained a great deal of experience concurrently with the Achievers in all phases of business operation, including those outside the normal sphere of their regular daily work.

The California and Hawaiian Sugar Refining Corporation, sponsors Junior Achievement companies in San Francisco and Crockett, California.

The C and H Junior Achievement company in San Francisco, known as *Golden Achievements*, is producing a household tool holder.



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Celebrating 60 Quality Years

This item can be used in the kitchen as a holder for spoons, knives, and other small kitchen utensils. It is simple in design but it is a product which gives the youngsters a very good chance to learn how to operate certain machines and allows them to easily follow different stages of production, up to and including final packaging. To finance the production of these products, the company members decided to capitalize to the extent of $100 by selling 200 shares of 50c par value stock.

The C and H employees serving as advisers to the group of youngsters are:

Business Advisers: Frank Cavallini (Taxes), and John Butterfield (Traffic).

Sales Advisers: Al Thompson (Order), and Peter Kirwan (Purchasing).

Production Adviser: Frank Tippett (Purchasing).

Make your product a stand-out among competing look-alike brands by adding the eye appeal of . . .

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CERTIFIED FOOD COLORS

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Golden Achievement is progressing quickly to fulfill this purpose. Stock has been sold to raise the "corporation's" beginning capital. Production is now in full swing and the product is on the market. Officers and managers have been elected and the company's policies and procedures have been established.

The members of the company are from five different high schools in San Francisco. The average age is about 16 years. All the members are eager and very much interested in their work and in their company. The results should be beneficial to company members, advisers, stockholders and C & H public relations.

Rockwood & Company, Brooklyn, N. Y. manufacturers of chocolate, has, for a number of years, participated in the general program of Junior Achievement as part of its local community relations program.

The Rockwood-sponsored J. A. firm—Pronto Foods—had to consider markets in selecting the type of product they would like to make and sell. Conclusions were that it would have to be a low-priced grocery item, easily produced, non-perishable, and with varied market potential. The product decided upon was a single-serving package of Instant Cocoa which they called MIX-N-DRINK. It was considered new and different because it was the only individually packaged chocolate drink instantly soluble in HOT or COLD liquids on the market.

At the start, Pronto management estimated that the company would be able to produce and sell 6,000 units. However, this estimate proved a bit optimistic. The members worked like beavers, selling shares to finance their company, producing their product, packaging, sealing, packing, selling, recording, bookkeeping, and conducting company business.

As sales increased and orders began coming in, extra meetings were called. These were usually conducted in the Rockwood Consumer Kitchen. This direct contact with the sponsoring firm gave this group a sense of being a part

of big business. They soon developed a personal interest in their sponsor to the point of identifying themselves with Rockwood & Co.

They soon learned that sales were not automatic. At first they sold to parents, friends and teachers. Next they tried selling to strangers by knocking on doors, and talking down the sales resistance of seemingly disinterested adults. They also called on local independent grocers, luncheonettes and cafeterias. The third step was a type of selling using a production-demonstration medium at the Junior Achievement annual Open House. And, the final step consisted of selling at the POINT - OF - SALE. This meant that they had to sell the Store Manager on the wholesale level, then arrange to put on a grocery store demonstration, selling the product to the consumer public.

Working with Annette D. Robbins as advisers to Pronto Foods were: John P. Grattan, assistance sales manager, Coating Division, and Edmund Samuels, Senior Accountant of the Accounting Department, as they met with the young people one night a week to provide guidance in financing, management, production, bookkeeping and accounting, advertising and sales, all the steps that are basic and fundamental to our economic system.

At Crockett, California, C & H Sugar Refining sponsored a teenage firm which calls themselves "The JAWP Company" for Junior Achievement Wood Products.

They decided to manufacture a wooden toy with removable legs, head, tail, etc. The toy is so constructed that from the basic body they can make at least five different animals. The production of these animals involves selection of proper wood, cutting the parts, using power tools, sanding, drilling, staining and painting, assembling and packaging. They handle their own publicity and promotion.

The JAWP Company capitalized for $100 and sold 200 shares of stock at 50c per share.

JAWP changed its production from the Christmas set of farm animals after the first of the year and began turning out appropriate animals for the Easter season such as chicks, rabbits, ducklings, etc.

The JAWP company advisers are community leaders and members of the C & H Crockett Refinery organization. The JAWP advisers are: James Knapton, C & H Refinery Production Superintendent; Jack Fisher, C & H Refinery Training Director; Elton Turner, representative of the C & H Community Relations Dept.; Mrs. Blanche Ball, Community Playground Director, and Frank Brueheim, Activity Director of the Crockett Club.

The type of activities described above are the highest form of public relations. The results of this type of work with youngsters will pay the sponsoring company, the community and the nation dividends for years to come, in the form of young men and women who know the economic facts of life and can intelligently discuss and champion the American way of life and its indispensable economic system.

—the end

MERCKENS CHOCOLATE COMPANY, INC.

155 Great Arrow Avenue, Buffalo 7, New York

BRANCHES AND WAREHOUSE STOCKS IN

BOSTON, NEW YORK, CHICAGO, LOS ANGELES, OAKLAND, SALT LAKE CITY, SEATTLE

Visit our display at the

PHILADELPHIA CANDY SHOW

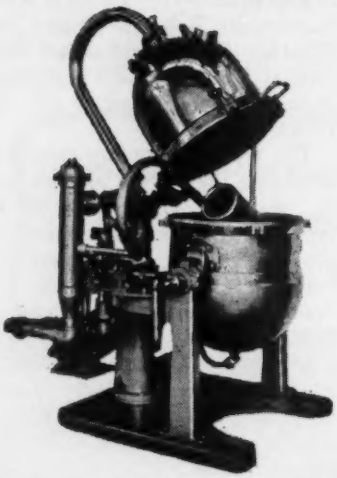
Benjamin Franklin Hotel, Room 423

(Advertisement)

HIGHEST QUALITY HARD CANDY

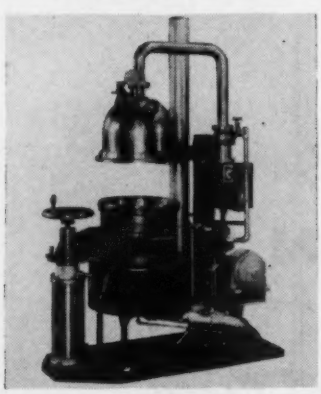
The Simplex Type D-3 Steam Vacuum Cooker is designed to cook perfectly all sugar or any combination of ingredients. It will also handle any size batch from 25 to 200 pounds alternately and the types of candy as well as the ingredients can be varied without losing time.

The product produced by the Simplex Vacuum Cooker is superior. The candy is whiter and drier. Stickiness from dampness is reduced because the Simplex process removes the maximum moisture.



For complete details write to **Vacuum Candy Machinery Co. 15 Park Row, New York 38, N. Y.**

NO STEAM? THIS GAS VACUUM COOKER DOES THE JOB



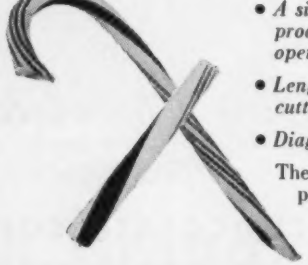
The new, redesigned and improved model H-1 Simplex Gas Vacuum Cooker is equipped with a new hydraulic lift and kettle tilting method to make working conditions easier and to take the hard work out of hard candy. It is well suited to plants that do not have high pressure steam available. Operating on gas, it comes as one complete unit, including vacuum pump and motor, vacuum gauge, gas fired furnace blower and motor.

With a cooker capacity of from 25 to 120 pounds per batch, the machine is designed for efficient, economical production of fruit drops, stick candies, lolly pops and other types of hard candies, as well as quicker cooking of fondant syrup.

Additional information is available from **Vacuum Candy Machinery Co., 15 Park Row, New York 38, N. Y.**

automatically, continuously sizes, twists and cuts sticks of any diameter and length

produces up to 1,000 inches a minute



A single operator can produce up to 1,000 inches a minute of round or triangular sticks — *clear, pulled or with honey-combed centers*—with the Racine Stick Candy Machine. For three-inch sticks, this means over 300 a minute . . . 18,000 an hour.

The operator only has to feed the machine from a batch roller or flat board. The sizing, twisting and cutting are automatic and continuous. Here are just a few of the many other important features of the Racine Stick Candy Machine:

- *Diameter of stick is easily adjusted by interchanging the sizing roll rims.*
- *A single handwheel adjustment sets speed to your production needs — even while the machine is in operation.*
- *Length of sticks is easily varied by adjusting the cutting knife speed.*
- *Diagonal cut-off attachment also available.*

The Racine Stick Candy Machine means increased production and lower costs for you. Get the complete details . . . write today.

VACUUM CANDY MACHINERY CO. V R **RACINE CONFECTIONERS' MACHINERY CO.**

15 PARK ROW, NEW YORK 38, N. Y.

Western Office and Factory: Racine, Wis. • Eastern Factory: Harrison, N. J.

The MANUFACTURING CONFECTIONER'S

Candy Clinic

The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Some samples represent a bona-fide purchase in the retail market. Other samples have been submitted by manufacturers desiring this impartial criticism of their candies, thus availing themselves of this valuable service to our subscribers. Any one of these samples may be yours. This series of frank criticisms on well-known branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of The MANUFACTURING CONFECTIONER.

Summer Candies and Packages

Code 7J4
Marshmallow Peanuts
14 ozs., 29c

(Purchased in a chain grocery store)
Appearance of Package: Good.
Container: Polyethylene bag printed in red, white and blue. Imprint of clown in colors.
Peanuts:
Color: Good.
Texture: Good.
Taste: Good.
Remarks: One of the best marshmallow peanuts we have examined this year.

Code 7K4
Butter Mints
6 ozs., 25c

(Sent in for analysis #4672)
Appearance of Package: Good.
Container: Folding box, window on top. White, printed in green, red and yellow. Sides and bottom printed in a plaid of green, white and yellow. Pieces are wrapped in printed cellulose.
Mints:
Color: Good.
Texture: Good.
Flavor: See remarks.
Remarks: A very neat and attractive package. Suggest the mint flavor be stronger. A good eating mint, one of the best we have examined this year. A piece of this type loses its flavor very quickly so it is best to have the flavor strong when made.

Code 7L4
Assorted Chocolates
1 lb.

Appearance of Package: Good.
Box: One layer type, white embossed paper top, name embossed in gold. Oblong shape tied with pink and yellow grass ribbon. Brown outside paper wrapper tied with printed orange and brown grass ribbon.
Appearance of Box on Opening: Good.
Number of Pieces:
Dark Coated: 28.
Light Coated: 7.
Half Dipped: 2.
Jordan Almonds: 6.
Coatings: Dark and light.
Color: Good.
Gloss: Good.
Strings: Good.
Taste: Good.
Dark Coated Centers:
Nut Crunch: Good.
Mint Cream: Good.
Vanilla Nut Caramel: Good.
Vanilla Cream: Good.
Chocolate Cream: Good.
Buttercream: Good.
Orange Colored Cream: Lacked flavor.
Chocolate Nut Cream: Had an "off" taste.
Coconut Cream: Good.
Chocolate Caramel: Good.
Cordial Pineapple: Good.
Maple Cream: Good.
Half Dipped Coconut Kisses: Good.
Light Coated Centers:
Buttercream: Good.
Nut Crunch: Good.
Pecan Top Buttercream: Good.
Vanilla Cream: Good.
Chocolate Nut Cream: Had an off taste.
Jordan Almonds: Good.
Assortment: See remarks.
Remarks: Assortment contained too many creams. Quality of the candy is good. Suggest less creams and a few hard candy and chewy pieces be added to improve the assortment.

Code 7M4
Vanilla & Chocolate Nut Fudge
1 lb., 59c

(Purchased in a food store, Chicago, Ill.)
Container: Folding box, white printed in red and blue.
Fudge:
Colors: Good.
Texture: Good.
Taste: Good.
Remarks: The best fudge at this price we have examined this year.

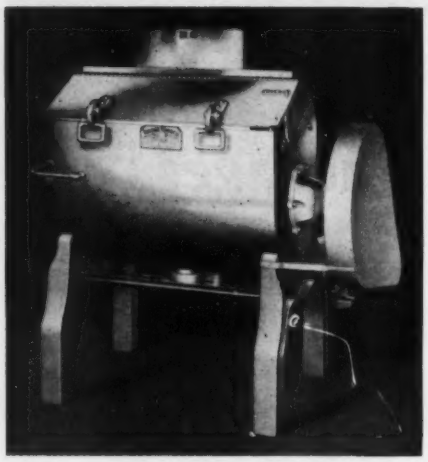
Candy Clinic Schedule For the Year

JANUARY—Holiday Packages; Hard Candies
FEBRUARY—Chewy Candies; Caramels; Brittles
MARCH—One-Pound Boxes Assorted Chocolates up to $1.00
APRIL—$1.00 and up Chocolates; Solid Chocolate Bars
MAY—Easter Candies and Packages; Moulded Goods
JUNE—Marshmallows; Fudge
JULY—Gums; Jellies; Undipped Bars
AUGUST—Summer Candies and Packages
SEPTEMBER—Bar Goods; 5c Numbers
OCTOBER—Salted Nuts; 10c-15c-25c Packages
NOVEMBER—Cordial Cherries; Panned Goods; 1c Pieces
DECEMBER—Best Packages and Items of Each Type Considered During Year; Special Packages; New Packages

for Better Marshmallows

the SAVAGE BEATER

. . . . IS YOUR ANSWER. The Savage latest improved sanitary marshmallow beater is constructed with stainless steel tank, shaft, paddles and breaker bars—100% sanitary. This beater is considered standard by manufacturers. Built for strength and durability, it assures perfect manipulation of each batch. Hundreds of users in the United States and foreign countries prefer the Savage Beater for its economy in operation and performance in production, because it saves time, space, and operating cost. Four 200 pound Savage Beaters will supply a mogul for continuous operation.



THE FIRST COST IS THE LAST COST

- **Unexcelled for volume and lightness**
- **Stainless construction—100% sanitary**
- **No corners for contamination**
- **Outside stuffing boxes—no leakage possible**
- **Maximum beating for volume**
- **Faster heat discharge from batch**
- **Creates volume suction of cold air**
- **Larger water jacket for quick cooling**
- **6" outlet valve for quick emptying**
- **Less power needed with roller bearings**
- **Large two piece air vent—sanitary**
- **Direct motor drive**
- **Sizes available: 150 lb. or 80 gal. capacity**
  200 lb. or 110 gal. capacity

SAVAGE oval type marshmallow beater also manufactured with stainless water jacketed, galvanized cast iron heads, paddles and breaker bars.

Since 1855

SAVAGE BROS. CO.

2638 Gladys Ave. Chicago 12, Ill.

Code 7N4
Marshmallow Cups
4½ ozs., 29c

(Purchased in a chain grocery store, Chicago, Ill.)

Appearance of Package: Good.
Container: Oblong tray containing 14 cups. Paper backed foil printed in yellow, white and brown. Name in red. Piece is cast in paper cups. Light chocolate with a marshmallow center.
Cups:
Chocolate, Light: Good.
Marshmallow Center: Very good.
Taste: Good.
Remarks: A very good eating piece, well made and of good quality. Should be a good seller at 29c.

Code 7P4
Assorted Summer Candies
1 lb., No price stated

(Purchased in a candy store, St. Paul, Minn.)

Appearance of Package: Good.
Box: One layer, square shape. White glazed paper top, name printed in red and gray. White paper wrapper, overall print of name in gray. Tied with red twine.
Appearance of Box on Opening: Good.
Assorted Bon Bons:
Centers: Good.
Jackets: Some of the jackets were very hard.
Summer Date: Good.
Wrapped Nougat: Good.
Assorted Gums: Good.
Gum & Marshmallow in Layers: Good.
Three Layer Gums & Marshmallow: Good.
Summer Coated Molasses Coconut: Good.
Summer Coated Nougat: Good.
Toasted Coconut Balls: Good.
Summer Coated Vanilla Caramel: Good.
Assortment: Good for this type of coating.
Remarks: Suggest a few acid cream centers with summer coatings: raspberry creams, lemon creams, orange creams. A few jellies, a hard candy sour ball, etc., would also improve the box. These are good eating pieces in summer coating.

Code 8H4
Pecan Nougat Roll
8 ozs., 39c

(Purchased in a chain drug store, St. Paul, Minnesota)

Appearance of roll: Good.
Wrapper: Amber colored cellulose printed in red and buff.
Roll:
Pecans: Good.
Caramel: Good.
Nougat: Good.
Taste: Good.
Remarks: One of the best pecan nougat rolls we have examined this year. Cheaply priced at 39c for 8 oz.

Manufacturing Methods and Formulas for

Nut Candies

Continued from July, 1954
The Manufacturing Confectioner

Walter Richmond, the author of this article, is plant superintendent at the Norris Candy Company, Atlanta, Ga. He is well known to this industry through his book, "Candy Production Methods and Formulas," published by The Manufacturing Confectioner Publishing Company. This article is a chapter from Mr. Richmond's new book, to be published this summer. This will be primarily made up of formulas and methods for the manufacture of high grade confections, such as are produced by retail confectioners and high grade wholesale package goods houses.

Formula # 316
ICED ASSORTED NUT BRITTLE

Small Batch	Ingredients	Large Batch
3 lbs.	Granulated sugar	12 lbs.
3 lbs.	Corn syrup	12 lbs.
1 lb.	No. 1 Spanish peanuts	4 lbs.
½ lb.	Black walnuts	2 lbs.
¾ lb.	English walnut pieces	3 lbs.
½ lb.	Roasted cashew pieces	2 lbs.
1½ ozs.	Bicarbonate of soda	6 ozs.
¼ oz.	Salt	1 oz.
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 240 degrees Fahr. Add peanuts and cook to 295-300 degrees. Add other nut meats. Stir and set kettle off of furnace. Add salt and soda. Stir until soda is well mixed into the batch and the batch puffs up. Pour onto oiled cooling slab. Quickly spread the batch. Do not stretch the brittle but cut it into pieces large enough to fit stock boxes, after the brittle is coated with icing. Place the warm cut pieces into trays that have been lined with heavy wax paper. Cover the top surface of the warm pieces with icing (formula # 197). Turn pieces over with the iced surface next to the wax paper. Cover the pieces with icing. Allow to remain in trays until icing is dry. Place in stock boxes until ready to be sold.

REMARKS. Iced nut brittle makes a good item to add to the line of iced goods for the summer months. The iced brittle has a good eating quality and a very good texture.

Formula # 317
PEANUT BARS OR SQUARES

Small Batch	Ingredients	Large Batch
2¼ lbs.	Granulated sugar	9 lbs.
1¾ lbs.	Corn syrup	7 lbs.
½ lb.	Corn sugar (dextrose hydrate)	2 lbs.
	OR	
½ lb.	Invert sugar	2 lbs.
2 liquid ounces	Medium dark molasses	½ pt.
6½ lbs.	Warm blanched peanuts (see remarks)	26 lbs.
¼ oz.	Salt	1 oz.
12 ozs.	Water	3 pts.

PROCEDURE. Place sugar, corn syrup and water in a cooking kettle. Cook to 290 degrees Fahr. Add molasses and recook to 290 degrees. Set kettle off of the furnace. Add warm peanuts and salt. Mix well and pour onto well oiled cooling slab that has been sprinkled with fine sugar. Spread batch and roll down to desired thickness. Cut to desired size with roller cutting knives. Pack into wax paper lined stock boxes.

REMARKS. This formula produces a peanut bar or square with a crispy texture, a very good eating quality and a good glossy top surface. The small amount of molasses used in the batch adds to its eating quality. Using some invert sugar or dextrose makes a thin flowing batch that permits the use of a larger percentage of nuts.

Either Spanish or Virginia peanuts can be used. The amount of nuts to use can be varied to suit your requirements.

The batch can be spread to a thickness of about ⅞ inches and left with a rough, uneven top surface and cut into ⅞ inch squares to produce what is known as peanut nibs to add to a mixture of Christmas Candies containing cream peanut

for flavors

that make

them ask

for more!

GIVAUDAN FLAVORS have provided keys to sales success for many manufacturers—of confections, ice creams, soft drinks, baked goods, puddings, cordials and other products.

Our chemists and flavor experts have developed a complete, quality line of basic flavor materials, natural fruit flavors and imitation flavors to meet every need. They will gladly help you select the right flavors for your products...or work closely with you to develop distinctive individual flavors to meet your special requirements.

Givaudan Flavors Inc.

330 West 42nd Street, New York 36, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Detroit
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or coconut squares, coconut blocks, sugar sanded jellies and other uncoated candies.

A very small amount of soda can be added to the batch to improve the crispiness of the bars. Add ⅛ ounce of soda to the *small batch* as soon as the kettle is removed from the fire. Add ½ ounce of soda to the *large batch*.

Formula # 318
PEANUT ROCK

Small Batch	Ingredients	Large Batch
4 lbs.	Granulated sugar	12 lbs.
3 lbs.	Corn syrup	9 lbs.
5½ lbs.	Raw No. 1 Spanish peanuts	16½ lbs.
1½ pts.	Water	2¼ qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Bring to a good stiff boil. Add peanuts and cook batch until peanuts are well roasted. Pour onto a well oiled cooling slab to a thickness of ½ to ⅝ inch. The batch can then be cut into squares and packed in wax paper lined containers or can be cut into pieces large enough to fit a stock box and then be broken, with a candy hatchet, into uneven size pieces as the candy is sold.

REMARKS. This old fashion peanut candy contains a large percentage of syrup. The nuts will rise to the surface of the batch on the slab and makes a piece of candy with a heavy clear hard candy body with a top surface of nuts. This candy is often included in a Christmas assortment of candies as suggested in the preceding formula # 317.

Formula # 319
OLD FASHION PEANUT BARS, SQUARES OR PATTIES

Small Batch	Ingredients	Large Batch
2 lbs.	Granulated sugar	8 lbs.
2 lbs.	Corn syrup	8 lbs.
6 lbs.	Warm oil roasted Spanish peanuts	24 lbs.
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in a cooking kettle. Cook to 290 degrees Fahr. Add *warm* oil roasted peanuts. When peanuts are well mixed into the batch, pour batch on one end of a well oiled cooling slab. The batch should be mixed with a metal bar, about ¼ inch thick and 2 to 2½ inches wide, until the batch has cooled sufficiently to permit spreading the batch without having an excess of syrup settling to the bottom of the candy. The candy can then be spread to a desired thickness and cut into blocks.

Nut Patties

Patties can be made by placing small quantities of candy into metal rings that are laid on the oiled slab, and then spread out to fill the metal rings. When making *patties* only a portion of the large batch should be poured on the slab and mixed until cool before placing the candy into the metal rings. The batch would become too stiff to spread evenly in the rings if the entire batch were mixed and cooled, unless, sufficient amount of girls were used to fill the rings quickly.

REMARKS. This formula produces a very crunchy candy with a fine eating quality. Roasting the peanuts in oil improves the eating quality and the nuts retain their maximum heat which permits the use of a large quantity of nuts.

Patties are often made with just sufficient amounts of syrup to hold the nuts together. This is done by draining some of the syrup from the nuts by placing the mixed batch into a wire sieve with ⅛ inch openings. The syrup that was drained from the nuts can be used in the next batch of patties, if more than one batch is being made in one day. Weigh the drained syrup and add two parts sugar and one part corn syrup in amounts to make the standard size batch. Cook the syrup and added sugar and corn syrup to the temperature specified in the formula. If only one batch per day is being made the surplus sugar can be reduced with water to make a syrup of the density of corn syrup. This syrup can be used in molasses flavored or other dark colored coconut candies; used to replace a part of the corn syrup in many dark colored chewy candies that are to be chocolate coated.

If an assortment of drained nut patties are to be made the

batches should be made in the following order. Brazil nut, walnut, Virginia peanut, filbert or almond and Spanish peanut. By following this procedure the lighter batches are made first which will permit using the surplus syrup in the darker batches.

Formula # 320
BRAZIL NUT HASH OR PATTIES

Small Batch	Ingredients	Large Batch
2 lbs.	Granulated sugar	8 lbs.
2 lbs.	Corn syrup	8 lbs.
Sufficient	Blanched small Brazils or pieces	Sufficient
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 280 degrees Fahr. Add as many Brazil nuts (not too cold) as the syrup will take up. Drain off surplus syrup by placing the mixture in a metal sieve with ⅛ inch openings. Pour batch onto oiled cooling slab. Spread to desired thickness and cut into suitable size bars. Wrap each bar in wax paper or moisture proof cellulose wrappers.

Patties

Proceed with instructions for making patties outlined in formula # 319.

Use surplus syrup for next batch of patties (see remarks formula # 319 for methods of using surplus syrup).

A nut bar or patties with a more solid body can be obtained by not draining the nuts.

Formula # 321
VIRGINIA PEANUT HASH OR PATTIES

Small Batch	ngredients	Large Batch
2 lbs.	Granulated sugar	8 lbs.
2 lbs.	Corn syrup	8 lbs.
6 lbs.	*Warm* blanched roasted No. 1 Virginia peanuts	24 lbs.
¼ oz.	Salt	1 oz.
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 280 degrees Fahr. Set kettle off of furnace. Add salt and *warm* peanuts. Drain off surplus syrup by placing the mixture in a metal sieve with ⅛ inch openings. Pour onto oiled cooling slab. Spread to desired thickness and cut into suitable size bars. Wrap each bar in wax paper or moisture proof cellulose wrappers.

Patties

Proceed with instructions for making patties outlined in formula # 319. Use surplus syrup for next batch of patties (see remarks formula # 319 for methods of using surplus syrup).

A nut bar or pattie with a more solid body can be obtained by not draining the nuts.

Formula # 322
WALNUT HASH OR PATTIES

Small Batch	Ingredients	Large Batch
2 lbs.	Granulated sugar	8 lbs.
2 lbs.	Corn syrup	8 lbs.
3 lbs.	English walnuts	12 lbs.
	or	
3 lbs.	Western black walnuts	12 lbs.
¼ oz.	Salt (see note)	1 oz.
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 290 degrees Fahr. Add salt and nut meats (as many as the syrup will take up. Approximately the amount specified above). Drain off surplus syrup by placing the mixture in a metal sieve with ⅛ inch openings. Pour onto oiled cooling slab. Spread to desired thickness and cut into suitable size bars. Wrap each bar in wax paper or moisture proof cellulose wrappers.

Patties

Proceed with instructions for making patties outlined in formula # 319. Use surplus syrup for next batch of patties (see remarks formula # 319 for methods of using surplus syrup).

SPEAS

APPLE PRODUCTS

the Standard of Quality for sixty years

NUTRL-JEL

for preserves, jams, jellies, marmalades

CONFECTO-JEL

for jellied candies

CONFECTO-JEL—a buffered apple pectin mixture for jellied candies—ready for use.

CONCENTRATED APPLE JUICE

Plants in Apple Regions From the Atlantic to the Pacific

SPEAS COMPANY, General Offices, Kansas City 1, Missouri

A bar or pattie with a more solid body can be obtained by not draining the nuts.

Note. Use one-half of the amount of salt specified above for black walnut hash.

Formula # 323
FILBERT OR ALMOND HASH OR PATTIES

Small Batch	Ingredients	Large Batch
2 lbs.	Granulated sugar	8 lbs.
2 lbs.	Corn syrup	8 lbs.
4 lbs.	Roasted filberts or almonds (see note)	16 lbs.
¼ oz.	Salt	1 oz.
1 pt.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 280-285 degrees Fahr. Add salt and as many nut meats as the syrup will take up. (Approximately the amount specified above.) Drain off surplus syrup by placing mixture in a metal sieve with ⅛ inch openings. Pour onto oiled cooling slab. Spread to desired thickness and cut into suitable size bars. Wrap each bar in wax paper or moisture proof cellulose wrappers.

Patties

Proceed with instructions for making patties outlined in formula # 319. Use surplus syrup for next batch of patties (see remarks formula # 319 for methods of using surplus syrup).

Note. The roasted nut can used with the skins on or blanched nuts can be used. A bar with a more solid body can be obtained by not draining the nuts.

Formula # 324
PEANUT-COCONUT HASH
ALSO CHIP COCONUT HASH

Small Batch	Ingredients	Large Batch
4 lbs.	Granulated sugar	10 lbs.
4 lbs.	Corn syrup	10 lbs.
2 lbs.	No. 1 Spanish peanuts	5 lbs.
4 lbs.	Chip coconut	10 lbs.
¾ oz.	Salt	2 ozs.
1½ pts.	Water	2 qts.

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 240 degrees Fahr. and add the raw peanuts. Cook to 285 degrees. Add the salt and chip coconut. Continue cooking and mixing until the thin edges of the coconut turn a golden brown color. Pour onto oiled cooling slab. With two forks, pull off pieces of the hash and spread them as thin as possible. Continue this operation until all of the hash has been pulled apart. Pack into wax paper lined stock boxes.

REMARKS. A tender eating quality depends upon how thin the hash has been spread. A thick piece of this hash has a very hard texture and is not easily chewed.

A more tender product can be obtained by draining some of the syrup from the mixture by placing it in a metal sieve with ¼ inch openings. The drained surplus syrup can be used according to the instructions outlined in formula # 319.

The peanuts can be omitted if so desired, to produce a coconut hash.

Formula # 325
MAPLE PECAN PEAKS

Small Batch	Ingredients	Large Batch
12 ozs.	Maple sugar	2 lbs.
	or	
1 pt.	Maple syrup	3 pts.
½ lb.	White sugar	1½ lbs.
½ lb.	Yellow C sugar # 8-10	1½ lbs.
2 lbs.	Corn syrup	6 lbs.
12 ozs.	Water	1¼ qts.
7 lbs.	Pecan Halves	21 lbs.

PROCEDURE. Place maple sugar (if used) and water in

He *always* inserts his nickel for the same candy. Why?

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WILBUR Chocolate COATINGS

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cooking kettle. Slowly dissolve the maple sugar. Add white and yellow C sugar, corn syrup and maple syrup (if used). Cook to 240 degrees Fahr. Mix pecans into the syrup. Pour onto an oiled slab. Mix the batch frequently while the batch is cooling. When the batch has cooled form into peaks. Wrap each peak in wax paper.

REMARKS. This formula produces a very fine flavored pecan confection. The mixture must be mixed frequently so that the warm syrup will not settle to the bottom of the batch on the slab.

Formula # 326
GLACE NUTS OR FRUITS

Small Batch	Ingredients	Large Batch
6 lbs.	Sugar	30 lbs.
1½ lbs.	Corn syrup	7½ lbs.
1¾ pts.	Water	4½ qts.
Sufficient	Nuts	Sufficient

PROCEDURE. Place sugar, corn syrup and water in cooking kettle. Cook to 280 degrees Fahr. Pour *large batch* into several bon bon dipping pots. Dip an assortment of nuts into the hot syrup using a bon bon dipping fork. Transfer the dipped nuts onto an oiled cooling slab or onto oiled tins. The syrup for the *small batch* can remain in the cooking pot and the nuts dipped into the syrup in the pot.

REMARKS. Fruits for glace fruits should be thoroughly dried before being dipped. Glace nuts can be made well in advance of selling time, provided they are packed into well covered tin containers. The moisture contained in fruits causes the syrup coating to grain off in a very few days. Glace fruits should be made only in quantities sufficient to last one or two days.

The size of the large batch can be governed by the number of girls used for dipping the nuts. The syrup should be used up quickly before it becomes dark in color.

PECAN PRALINES

Pecan pralines are a southern style pecan confection. The delicate flavor of pralines has given them a taste appeal that has created a demand for them throughout the entire United States. Each year more of these delicious confections are being are being sold by the manufacturing confectioner.

Pralines have a very tender texture. However the syrup should be cooked to a high enough degree to keep breakage to a minimum. If you have more than one store in your city, breakage can be kept at a low figure if the pralines are packed in stock boxes that have been lined with single face corrugated paper and the paper also used as a layer card between each layer of pralines.

There are several varieties of pralines. Some of the pralines are very thin and have a grainy texture with white spots in them, caused by clusters of sugar. They contain very little corn syrup. Another variety of praline has fewer white spots and is thicker than the other type pralines. The latter type praline has enough corn syrup to slow down the graining action of the sugar.

The several varieties of pralines contain some or all of the following ingredients: pecans, white sugar, brown sugar, maple sugar or maple syrup, dairy butter, milk or cream, and corn syrup.

The tenderness of the piece is governed by the amounts of non crystalline sugars or syrups used and the temperature to which the batch is cooked.

The grainy body is started by stirring the batch and rubbing the paddle on the sides of the kettle until a grain is developed and a cloudy look appears in the batch. This small amount of grain acts as a sugar seed, and the pralines should be deposited as soon as this cloudy look is apparent. Continued stirring will develop too much grain and the pralines will become too sugary in appearance and taste.

After the pralines are deposited, the sugar crystals continue to form until the candy becomes cool and the crystalline action stops.

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While this grain forming action is taking place, in the deposited pralines, some of the sugar crystals that have formed gather in clusters. This accounts for the white spots that appear in the pralines. These white clusters of sugar are harder in structure than the clearer part of the pralines. The white spots can be softened, to a certain extent, by the addition of one ounce of glycerine to every 8 or 10 pounds of syrup. The glycerine should be added to the batch before the graining process is started.

It is a known fact that heat and agitation hasten the forming of sugar crystals in a batch of candy. Therefore, it is best to allow the cooked syrup to cool for a short while before stirring, if a minimum of sugar crystals are to be formed. The lower the temperature of batch when it is stirred, the lesser will be the amount and size of the white spots that appear in the pralines. A thicker praline will result when the batch is stirred at the lower temperature.

The cooking temperature for your locality must be determined by the trial method. For a tender praline, a temperature as low as 236 degrees Fahr. has been used. Temperatures in the range of 238 to 244 degrees have also been used with good results. Larger amounts of non crystalline syrups call for a higher cooking temperature.

The method of adding the nuts to the batch and the manner of depositing the pralines varies. One method is to add all the nuts to the batch after the desired grain has formed. A given amount of syrup and nuts is then dipped out of the kettle and poured on sheets of tin that have been oiled with mineral oil.

Another method is to deposit the pralines on trays that have been lined with heavy wax paper that has been previously oiled with slab oil.

Another method of adding the nuts to the pralines is to place the determined amount of nuts for one praline into the syrup and dip the nuts and the amount of syrup needed for one praline out of the kettle and pour them onto oiled tins or wax paper.

Still another method of making pralines is to place metal rings onto the tins or wax paper. Place the amount of nuts desired for one praline into the rings and cover the nuts with the praline syrup. The syrup can be deposited by funnel, dipper or on a mechanical depositing machine.

Spooning by Hand

The cooked syrup is cooled to the desired temperature and the kettle containing the syrup should then be set into another kettle containing hot water to prevent the syrup from becoming too cold.

Each operator, used in the spooning process, should fill a half-gallon dipper about two-thirds full with the tempered syrup. The grain should be started by rubbing the sides of the dipper with a small paddle. When the batch becomes cloudy looking, add pecans and spoon out, on wax paper or oiled tins, with a large soup spoon. When all of the syrup in the dipper has been spooned out, again fill the dipper about two-thirds full with more syrup. Stir until batch becomes cloudy looking. Continue this process until all of the syrup is used up. The small amount of syrup remaining in the dipper, after the first dipper-full is used up will act as a seed for the added syrup and very little stirring will be needed to start a grain.

Following are formulas for various type pralines. The formulas are for small batches, but larger batches can be made according to how many operators are used in the hand spooning process or when the pralines are deposited by machine.

Pralines are at their best when freshly made and should be made frequently in small lots to assure a fresh tasting praline.

Maple sugar can be used to replace a part of the brown sugar and the maple flavor can be omitted from the batch.

It is important that the batch should not be over flavored with imitation maple flavor. *To be continued*

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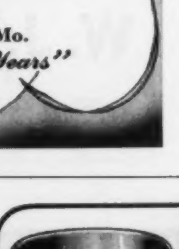
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Advertising space in The MANUFACTURING CONFECTIONER is available only to firms supplying equipment, materials, and services for the use of confectionery manufacturers. Advertising of finished confectionery products is not accepted.

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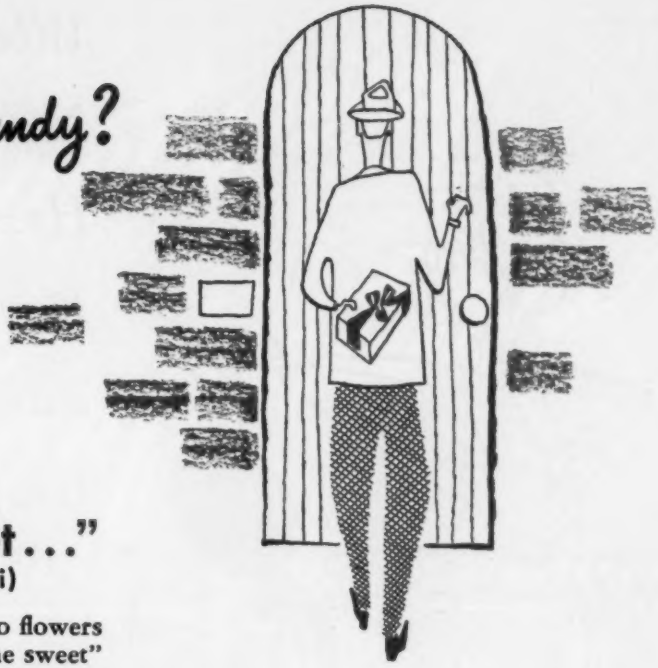

"Sweets to the sweet..."

(HAMLET, V, i)

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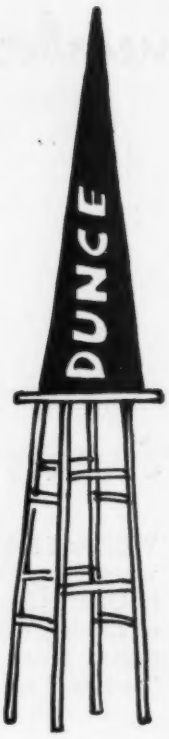

You sometimes have to give Nature a boost, for the sake of your own pocketbook. That's when Norda can be a big help.

Here's how it works:

You use Norda genuine natural fruit Flavors, because they give your products real true-fruit taste. They're rich and wonderful.

Maybe, though, it's not profitable to use *all* natural fruit flavors. Then "piece them out" and supplement them with Norda imitation Flavors. They have the same fine characteristics. They're full-bodied, true to type, almost indistinguishable from the genuine. You can economize with them, without skimping on strength or quality.

Norda Grape Flavor will show you. Let us send you *free* samples of both genuine and imitation. Send your request today.

–Come to Norda

Use a Norda "Favorite to Flavor It"

Norda

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